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BY CLIFFORD D. SIMAK

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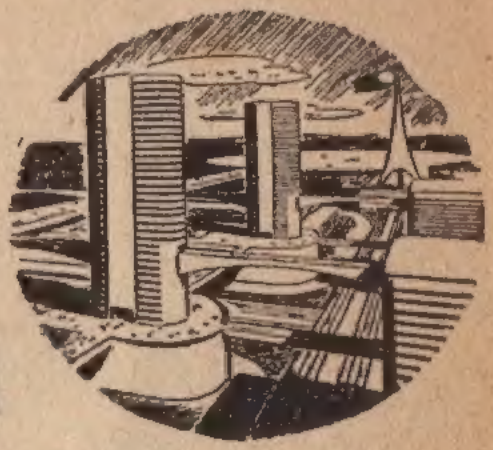

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COVER BY TIMMINS

Illustrations by Kramer, Orban and Williams

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$2.50 per Year in U. S. A. Printed in [redacted] the U. S. A. 25c per Copy

NEXT ISSUE ON SALE SEPTEMBER 22, 1944

Remarkably Absent

A high percentage of the super-weapons of science-fiction—placed in an era two hundred to two thousand years hence by the conservative, the practically reactionary, science-fiction authors—have been developed for highly efficient service in this war. It's really a little hard to realize that science-fiction guessed the bazooka—circa 2400 A.D. however—and rocket-bomb projectiles—also circa two to five centuries hence—as recently as five years ago. A lot of things this war has developed, the science-fictioneers missed either completely, or enormously underrated. For a long time, of course, science-fiction has insisted on the terrible danger of gas warfare—which has clearly failed to prove out. Chemical attack is the old standby of life-forms; really high-powered chemistry—so far beyond any laboratory technician as to be in a different class—has been life's own field for the past billion years or so. Chemical warfare hasn't proved out save in direct contact—vide the bee, poison ivy, white phosphorous grenades, and flame throwers—or in special cases of such things as the projector attack of the skunk.

But science-fiction underrated the practical possibilities of such simple things as dynamite on a stick, a can of TNT with a fuse buried in the ground, and a gooey gel of gasoline or fuel oil. When the impregnable defenses of Fort Eben Emanel fell, the Nazis were credited with a nerve-gas, a paralyzing ray, or, more broadly, a secret weapon. It turned out to be a combination of the dynamite on a stick and flame throwers. True enough, the fort could hold off an Army—but elephants are afraid of mice, not tigers. Individual men have proved a hundred other places that the simple things have been vastly underrated.

The bulldozer for instance. It's turned out, rather incredibly, to be one of the great strategic weapons of this war. You can *not* supply a work-crew of fifteen thousand men on a tiny mid-Pacific atoll. But a dozen men with bulldozers and power-earth-movers of that breed can carve out an airfield in the time it would take fifteen thousand men with shovels and barrows. And if A can build an airfield with bulldozers in four days, and J can build one with five thousand men in ten days, how long after A gets finished with his will J be able to use his? Hu-uh—doesn't work the way the algebra books have it. In war, the answer is J turns over his incompleted, bomb-pocked ruin to A shortly thereafter.

Some weapons we guessed. Some we described in peace-time modifications. But there's one that science-fiction has described in detail, used in many stories and many ways, one which requires, seemingly, no technological devices not already available, developed, and in use elsewhere—and yet remains remarkable by its total absence.

Where are those radio-controlled weapons? Model plane enthusiasts were flying gasoline-powered, radio-controlled models long before the war.

Yet the Nazi rocket bombs flown into England were controlled by gyrocompasses. The remote-controlled "beetle" tank-bombs were controlled by trailing electric wires. Could it be that radio, unlike wired communication, is much too public a medium? If you tell a radio "Make it turn left", somebody else may tell the witless thing "Now keep on turning left till you're headed right back where you came from, and don't spare the horsepower!" Wired communication has a certain privacy radio lacks. Maybe that's the answer?

THE EDITOR.

Census

by CLIFFORD D. SIMAK

In that cityless, even villageless world, he had to make a strange sort of census. How many, and what kind of more-than-human mutants were there?

Illustrated by Orban

Richard Grant was resting beside the little spring that gushed out of the hillside and tumbled in a flashing stream across the twisting trail when the squirrel rushed past him and shinnied up a towering hickory tree. Behind the squirrel, in a cyclone of churning autumn-fallen leaves, came the little black dog.

When he saw Grant the dog skidded to a stop, stood watching him, tail wagging, eyes a-dance with fun.

Grant grinned. "Hello, there," he said.

"Hi," said the dog.

Grant jerked out of his easy slouch, jaw hanging limp. The dog laughed back at him, red dish rag of a tongue lolling from its mouth.

Grant jerked a thumb at the hickory. "Your squirrel's up there."

"Thanks," said the dog. "I know it. I can smell him."

Startled, Grant looked swiftly around, suspecting a practical joke. Ventriloquism, maybe. But there was no one in sight. The woods were empty except for himself and the dog, the gurgling spring, the squirrel chattering in the tree.

The dog walked closer.

"My name," he said, "is Nathaniel."

The words were there. There was no doubt of it. Almost like human speech, except they were pronounced carefully, as one who was learning the language might pronounce them. And a brogue, an accent that could not be placed, a certain eccentricity of intonation.

"I live over the hill," declared Nathaniel, "with the Websters."

He sat down, beat his tail upon the ground, scattering leaves. He looked extremely happy.

Grant suddenly snapped his fingers.

"Bruce Webster! Now I know. Should have thought of it before. Glad to meet you, Nathaniel."

"Who are you?" asked Nathaniel.

"Me? I'm Richard Grant, enumerator."

"What's an enum . . . enumer—"

"An enumerator is someone who counts people," Grant explained. "I'm taking a census."

"There are lots of words," said Nathaniel, "that I can't say."

He got up and walked over to the spring, lapped noisily. Finished, he plunked himself down beside the man.

"Want to shoot the squirrel?" he asked.

"Want me to?"

"Sure thing," said Nathaniel.

But the squirrel was gone. Together they circled the tree, searching its almost bare branches. There was no bushy tail sticking out from behind the boll, no beady eyes staring down at them. While they had talked, the squirrel had made his getaway.

Nathaniel looked a bit crestfallen, but he made the best of it.

"Why don't you spend the night with us?" he invited. "Then, come morning, we could go hunting. Spend all day at it."

Grant chuckled. "I wouldn't want to trouble you. I am used to camping out."

Nathaniel insisted. "Bruce would be glad to see you. And Grandpa wouldn't mind. He don't know half what goes on, anyway."

"Who's Grandpa?"

"His real name is Thomas," said Nathaniel, "but we all call him Grandpa. He is Bruce's father. Awful old now. Just sits all day and thinks about a thing that happened long ago."

Grant nodded. "I know about that, Nathaniel. Juwain."

"Yeah, that's it," agreed Nathaniel. "What does it mean?"

Grant shook his head. "Wish I

could tell you, Nathaniel. Wish I knew."

He hoisted the pack to his shoulder, stooped and scratched the dog behind the ear. Nathaniel grimaced with delight.

"Thanks," he said, and started up the path.

Grant followed.

Thomas Webster sat in his wheel chair on the lawn and stared out across the evening hills.

"I'll be eighty-six tomorrow, he was thinking. Eighty-six. That's a hell of a long time for a man to live. Maybe too long. Especially when he can't walk any more and his eyes are going bad.

Elsie will have a silly cake for me with lots of candles on it and the robots all will bring me a gift and those dogs of Bruce's will come in and wish me happy returns of the day and wag their tails at me. And there will be a few televisor calls—although not many, perhaps. And I'll pound my chest and say I'm going to live to be one hundred and everyone will grin behind their hands and say "listen to the old fool."

Eighty-six years and there were two things I meant to do. One of them I did and the other one I didn't.

A cawing crow skimmed over a distant ridge and slanted down into the valley shadow. From far away, down by the river, came the quacking of a flock of mallards.

Soon the stars would be coming out. Came out early this time of year. He liked to look at them. The stars! He patted the arms of the chair with fierce pride. The stars, by Lord, were his meat. An obsession? Perhaps—but at least something to wipe out that stigma of long ago, a shield to keep the family from the gossip of historic busybodies. And Bruce was helping, too. Those dogs of his—

A step sounded in the grass behind him.

"Your whiskey, sir," said Jenkins.

Thomas Webster stared at the robot, took the glass off the tray.

"Thank you, Jenkins," he said.

He twirled the glass between his fingers. "How long, Jenkins, have you been lugging drinks to this family?"

"Your father, sir," said Jenkins. "And his father before him."

"Any news?" asked the old man.

Jenkins shook his head. "No news."

Thomas Webster sipped the drink. "That means, then, that they're well beyond the solar system. Too far out even for the Pluto station to relay. Halfway or better to Alpha Centauri. If only I live long enough—"

"You will, sir," Jenkins told him. "I feel it in my bones."

"You," declared the old man, "haven't any bones."

He sipped the drink slowly, tasting it with expert tongue. Watered too much again. But it wouldn't do to say anything. No use flying off the handle at Jenkins. That doctor. Telling Jenkins to water it a bit more. Depriving a man of proper drinking in his final years—

"What's that down there?" he asked, pointing to the path that straggled up the hill.

Jenkins turned to look.

"It appears, sir," he said, "that Nathaniel's bringing someone home."

The dogs had trooped in to say goodnight, had left again.

Bruce Webster grinned after them.

"Great gang," he said.

He turned to Grant. "I imagine Nathaniel gave you quite a start this afternoon."

Grant lifted the brandy glass, squinted through it at the light.

"He did," he said. "Just for a minute. And then I remembered things I'd read about what you're doing here. It isn't in my line, of course, but your work has been popularized, written up in more or less nontechnical language."

"Your line?" asked Webster. "I thought—"

Grant laughed. "I see what you mean. A census taker. An enumerator. All of that, I grant you."

Webster was puzzled, just a bit embarrassed. "I hope, Mr. Grant, that I haven't—"

"Not at all," Grant told him. "I'm used to being regarded as someone who writes down names and ages and then goes on to the next group of human beings. That was the old idea of a census, of course. A nose counting, nothing more. A matter of statistics. After all, the last census was taken more than three hundred years ago. And times have changed."

"You interest me," said Webster. "You make this nose counting of yours sound almost sinister."

"It isn't sinister," protested Grant. "It's logical. It's an evaluation of the human population. Not just how many of them there are, but what are they really like, what are they thinking and doing?"

Webster slouched lower in his chair, stretching his feet out toward the fire upon the hearth. "Don't tell me, Mr. Grant, that you intend to psychoanalyze me?"

Grant drained the brandy glass, set it on the table. "I don't need to," he said. "The World Committee knows all it needs to know about the folks like you. But it is the others—the ridge runners, you call them here. Up north they're jack-pine savages. Farther south they're something else. A hidden population—an almost forgotten population. The ones who took to the woods. The ones who scampered off when the World Committee loosened the strings of government."

Webster grunted. "The governmental strings had to be loosened," he declared. "History will prove that to anyone. Even before the World Committee came into being the governmental setup of the world was burdened by oxcart survivals. There was no more reason for the township government three hundred years ago than there is for a national government today."

"You're absolutely right," Grant told him, "and yet when the grip of government was loosened, its hold upon the life of each man was

loosened. The man who wanted to slip away and live outside his government, losing its benefits and escaping its obligations, found it an easy thing to do. The World Committee didn't mind. It had more things to worry over than the irresponsibles and malcontents. And there were plenty of them. The farmers, for instance, who lost their way of life with the coming of hydroponics. Many of them found it hard to fit into industrial life. So what? So they slipped away. They reverted to a primitive life. They raised a few crops, they hunted game, they trapped, they cut wood, did a little stealing now and then. Deprived of a livelihood, they went back to the soil, all the way back, and the soil took care of them."

"That was three hundred years ago," said Webster. "The World Committee didn't mind about them then. It did what it could, of course, but as you say, it didn't really mind if a few slipped through its fingers. So why this sudden interest now?"

"Just, I guess," Grant told him, "that they've got around to it."

He regarded Webster closely, studying the man. Relaxed before the fire, his face held power, the shadows of the leaping flames etching planes upon his features, turning them almost surrealistic.

Grant hunted in his pocket, found his pipe, jammed tobacco in the bowl.

"There is something else," he said.

"Eh," asked Webster.

"There is something else about this census. They'd take it anyhow, perhaps, because a picture of Earth's population must always be an asset, a piece of handy knowledge. But that isn't all."

"Mutants," said Webster.

Grant nodded. "That's right. I hardly expected anyone to guess it."

"I work with mutants," Webster pointed out. "My whole life is bound up with mutations."

"Queer bits of culture have been turning up," said Grant. "Stuff that has no precedent. Literary forms which bear the unmistakable imprint of fresh personalities. Music that has broken away from traditional expression. Art that is like nothing ever seen before. And most of it anonymous or at least hidden under pseudonyms."

Webster laughed. "Such a thing, of course, is utter mystery to the World Committee."

"It isn't that so much as something else," Grant explained. "The Committee is not so concerned with art and literature as it is with other things—things that don't show up. If there is a backwoods renaissance taking place, it would first come to notice, naturally, through new art and literary forms. But a renaissance is not concerned entirely with art and literature."

Webster sank even lower in his chair, cupped his hands beneath his chin.

"I think I see," he said, "what you are driving at."

They sat for long minutes in silence broken only by the crackling of the fire, by the ghostly whisper

of an autumn wind in the trees outside.

"There was a chance once," said Webster, almost as if he were speaking to himself. "A chance for new viewpoints, for something that might have wiped out the muddle of four thousand years of human thought. A man muffed that chance."

Grant stirred uncomfortably, then sat rigid, afraid Webster might have seen him move.

"That man," said Webster, "was my grandfather."

Grant knew he must say something, that he could not continue to sit there, unspeaking.

"Juwain may have been wrong," he said. "He might not have found a new philosophy."

"That is a thought," declared Webster, "we have used to console ourselves. And yet, it is unlikely. Juwain was a great Martian philosopher, perhaps the greatest Mars had ever known. If he could have lived, there is no doubt in my mind he would have developed that new philosophy. But he didn't live. He didn't live because my grandfather couldn't go to Mars."

"It wasn't your grandfather's fault," said Grant. "He tried to. Agoraphobia is a thing that a man can't fight—"

Webster waved the words aside. "That is over and done with. It is a thing that cannot be recaptured. We must accept that and go on from there. And since it was my family, since it was grandfather—"

Grant stared, shaken by the thought that occurred to him. "The dogs!" That's why—"

"Yes, the dogs," said Webster.

From far away, in the river bottoms, came a crying sound, one with the wind that talked in the trees outside.

"A raccoon," said Webster. "The dogs will hear him and be rearing to get out."

The cry came again, closer it seemed, although that must have been imagination.

Webster had straightened in the chair, was leaning forward, staring at the flames.

"After all, why not?" he asked. "A dog has a personality. You can sense that in every one you meet. No two are exactly alike in mood and temperament. All of them are intelligent, in varying degrees. And that is all that's needed, a conscious personality and some measure of intelligence.

"They didn't get an even break, that's all. They had two handicaps. They couldn't talk and they couldn't walk erect and because they couldn't walk erect they had no chance to develop hands. But for speech and hands, we might be dogs and dogs be men."

"I'd never thought of it like that," said Grant. "Not of your dogs as a thinking race—"

"No," said Wester, and there was a trace of bitterness running in his words. "No, of course, you didn't. You thought of them as most of the rest of the world still thinks of them. As curiosities, as sideshow animals, as funny pets. Pets that can talk with you.

"But it's more than that, Grant.

I swear to you it is. Thus far Man has come alone. One thinking, intelligent race all by itself. Think of how much farther, how much faster it might have gone had there been two races, two thinking, intelligent races, working together. For, you see, they would not think alike. They'd check their thoughts against one another. What one couldn't think of, the other could. The old story of two heads.

"Think of it, Grant. A *different* mind than the human mind, but one that will work with the human mind. That will see and understand things the human mind cannot, that will develop, if you will, philosophies the human mind could not."

He spread his hands toward the fire, long fingers with bone-hard, merciless knuckles.

"They couldn't talk and I gave them speech. It was not easy, for a dog's tongue and throat are not designed to speak. But surgery did it . . . an expedient at first . . . surgery and grafting. But now . . . now, I hope, I think . . . it is too soon to say—"

Grant was leaning forward, tensed.

"You mean the dogs are passing on the changes you have made. That there are hereditary evidences of the surgical corrections?"

Webster shook his head. "It is too soon to say. Another twenty years, maybe I can tell you."

He lifted the brandy bottle from the table, held it out.

"Thanks," said Grant.

"I am a poor host," Webster told him. "You should have helped yourself."

He raised the glass against the fire. "I had good material to work with. A dog is smart. Smarter than you think. The ordinary, run of the mill dog recognizes fifty words or more. A hundred is not unusual. Add another hundred and he has a working vocabulary. You noticed, perhaps, the simple words that Nathaniel used. Almost basic English."

Grant nodded. "One and two syllables. He told me there were a lot of words he couldn't say."

"There is much more to do," said Webster. "So much more to do. Reading, for example. A dog doesn't see as you and I do. I have been experimenting with lenses—correcting their eyesight so they can see as we do. And if that fails, there's still another way. Man must visualize the way a dog sees—learn to print books that dogs can read."

"The dogs," asked Grant, "what do they think of it?"

"The dogs?" said Webster. "Believe it or not, Grant they're having the time of their merry lives."

He stared into the fire.

"God bless their hearts," he said.

Following Jenkins, Grant climbed the stairs to bed, but as they passed a partially opened door a voice hailed them.

"That you, stranger?"

Grant stopped, jerked around.

Jenkins said, in a whisper. "That's the old gentleman, sir. Often he cannot sleep."

"Yes," called Grant.

"Sleepy?" asked the voice.

"Not very," Grant told him.

"Come in for a while," the old man invited.

Thomas Webster sat propped up in bed, striped nightcap on his head. He saw Grant staring at it.

"Getting bald," he rasped. "Don't feel comfortable unless I got something on. Can't wear my hat to bed."

He shouted at Jenkins. "What you standing there for? Don't you see he needs a drink?"

"Yes, sir," said Jenkins, and disappeared.

"Sit down," said Thomas Webster. "Sit down and listen for a while. Talking will help me go to sleep. And, besides, we don't see new faces every day."

Grant sat down.

"What do you think of that son of mine?" the old man asked.

Grant started at the unusual question. "Why, I think he's splendid. The work he's doing with the dogs—"

The old man chuckled. "Him and his dogs! Ever tell you about the time Nathaniel tangled with a skunk? Of course, I haven't. Haven't said more than a word or two to you."

He ran his hands along the bed covering, long fingers picking at the fabric nervously.

"Got another son, you know. Allen. Call him Al. Tonight he's the farthest from Earth that Man has ever been. Heading for the stars."

Grant nodded. "I know. I read about it. The Alpha Centauri expedition."

"My father was a surgeon," said Thomas Webster. "Wanted me to be one, too. Almost broke his heart, I guess, when I didn't take to it. But if he could know, he'd be proud of us tonight."

"You mustn't worry about your son," said Grant. "He—"

The old man's glare silenced him. "I built that ship myself. Designed it, watched it grow. If it's just a matter of navigating space, it'll get where it is going. And the kid is good. He can ride that crate through hell itself."

He hunched himself straighter in the bed, knocking his nightcap askew against the piled up pillows.

"And I got another reason to think he'll get there and back. Didn't think much about it at the time, but lately I've been recalling it, thinking it over, wondering if it mightn't mean . . . well, if it might not be—"

He gasped a bit for breath. "Mind you, I'm not superstitious."

"Of course you're not," said Grant.

"You bet I'm not," said Webster.

"A sign of some sort, perhaps," suggested Grant. "A feeling. A hunch."

"None of those," declared the old man. "An almost certain knowledge that destiny must be with me. That I was meant to build a ship that would make the trip. That someone or something decided it was about time Man got out to the stars and took a hand to help him along a bit."

"You sound as if you're talking

about an actual incident," said Grant. "As if there were some positive happening that makes you think the expedition will succeed."

"You bet your boots," said Webster. "That's just exactly what I mean. It happened twenty years ago, out on the lawn in front of this very house."

He pulled himself even straighter, gasped for breath, wheezing.

"I was stumped, you understand.

The dream was broken. Years spent for nothing. The basic principle I had evolved to get the speed necessary for interstellar flight simply wouldn't work. And the worst of it was, I knew it was *almost* right. I knew there was just one little thing, one theoretical change that must be made. But I couldn't find it.

"So I was sitting out there on the lawn, feeling sorry for myself, with a sketch of the plan in front of me. I lived with it, you see. I carried it everywhere I went, figuring maybe that by just looking at it, the thing that was wrong would pop into my mind. You know how it does, sometimes."

Grant nodded.

"While I was sitting there a man came along. One of the ridge runners. You know what a ridge runner is?"

"Sure," said Grant.

"Well, this fellow came along. Kind of limber-jointed chap, ambling along as if he didn't have a trouble in the world. He stopped and looked over my shoulder and asked me what I had.

" 'Spaceship drive,' I told him.

"He reached down and took it and I let him have it. After all, What was the use. He couldn't understand a thing about it and it was no good, anyhow.

"And then he handed it back to me and jabbed his finger at one place. 'That's your trouble,' he said. And then he turned and galloped off and I sat staring after him, too done in to say a single word, to even call him back."

The old man sat bolt upright in the bed, staring at the wall, nightcap canted crazily. Outside the wind sucked along the eaves with hollow hooting. And in that well-lighted room, there seemed to be shadows, although Grant knew there weren't any.

"Did you ever find him?" asked Grant.

The old man shook his head. "Hide nor hair," he said.

Jenkins came through the door with a glass, set it on the bedside table.

"I'll be back, sir," he said to Grant, "to show you to your room."

"No need of it," said Grant. "Just tell me where it is."

"If you wish, sir," said Jenkins. "It's the third one down. I'll turn on the light and leave the door ajar."

They sat, listening to the robot's feet go down the hall.

The old man glanced at the glass of whiskey, cleared his throat.

"I wish now," he said, "I'd had Jenkins bring me one."

"Why, that's all right," said Grant. "Take this one. I don't really need it."

"Sure you don't?"

"Not at all."

The old man stretched out his hand, took a sip, sighed gustily.

"Now that's what I call a proper mix," he said. "Doctor makes Jenkins water mine."

There was something in the house that got under one's skin. Something that made on feel like an outsider—uncomfortable and naked in the quiet whisper of its walls.

Sitting on the edge of his bed, Grant slowly unlaced his shoes, dropped them on the carpet.

A robot who had served the family for four generations, who talked of men long dead as if he had brought them a glass of whiskey only yesterday. An old man who worried about a ship that slid through the space-darkness beyond the solar system. Another man who dreamed of another race, a race that might go hand in paw with man down the trail of destiny.

And over it all, almost unspoken and yet unmistakable, the shadow of Jerome A. Webster—the man who had failed a friend, a surgeon who had failed his trust.

Juwain, the Martian philosopher, had died, on the eve of a great discovery, because Jerome A. Webster couldn't leave this house, because agoraphobia chained him to a plot a few miles square.

On stockinged feet, Grant crossed to the table where Jenkins had placed his pack. Loosening the straps, he opened it, brought out a thick portfolio. Back at the bed again, he sat down and hauled out sheafs of papers, thumbed through them.

Records, hundreds of sheets of records. The story of hundreds of human lives set down on paper. Not only the things they told him or the questions that they answered, but dozens of other little things—things he had noted down from observation, from sitting and watching, from *living* with them for an hour or day.

For the people that he ferreted out in these tangled hills accepted him. It was his business that they should accept him. They accepted him because he came on foot, briar-scratched and weary, with a pack upon his shoulder. To him clung none of the modernity that would have set him apart from them, make them suspicious of him. It was a tiresome way to make a census, but it was the only way to make the kind the World Committee wanted —and needed.

For somewhere, sometime, studying sheets like these that lay upon the bed, some man like him would find a thing he sought, would find a clue to some life that veered from the human pattern. Some betraying quirk of behaviorism that would set out one life against all the others.

Human mutations were not uncommon, of course. Many of them were known, men who held high position in the world. Most of the World Committee members were mutants, but like the others, their mutational qualities and abilities had been modified and qualified by the pattern of the world, by unconscious conditioning that had shaped their thoughts and reaction into some conformity with other fellow men.

There had always been mutants, else the race would not have advanced. But until the last hundred years or so they had not been recognized as such. Before that they had merely been great businessmen or great scientists or great crooks. Or perhaps eccentrics who had gained no more than scorn or pity at the hands of a race that would not tolerate divergence from the norm.

Those who had been successful had adapted themselves to the world around them, had bent their greater mental powers into the pattern of acceptable action. And this dulled their usefulness, limited their capacity, hedged their ability with restrictions set up to fit less extraordinary people.

Even as today the known mutants' ability was hedged, unconsciously, by a pattern that had been set—a groove of logic that was a terrible thing.

But somewhere in the world there were dozens, probably hundreds, of other humans who were just a little more than human—persons whose lives had been untouched by the rigidity of complex human life. Their ability would not be hedged, they would know no groove of logic.

From the portfolio Grant brought out a pitifully thin sheaf of papers, clipped together, read the title of the script almost reverently:

"Unfinished Philosophical Proposition and Related Notes of Juwain"

It would take a mind that knew no groove of logic, a mind unhampered by the pattern of four thousand years of human thought to carry on the torch the dead hand of the Martian philosopher had momentarily lifted. A torch that lit the way to a new concept of life and purpose, that showed a path that was easier and straighter. A philosophy that would have put mankind ahead a hundred thousand

years in two short generations.

Juwain had died and in this very house a man had lived out his haunted years, listening to the voice of his dead friend, shrinking from the censure of a cheated race.

A stealthy scratch came at the door. Startled, Grant stiffened, listened. It came again. Then, a little, silky whine.

Swiftly Grant stuffed the papers back in the portfolio, strode to the door. As he opened it, Nathaniel oozed in, like a sliding black shadow.

"Oscar," he said, "doesn't know I'm here. Oscar would give it to me if he knew I was."

"Who's Oscar?"

"Oscar's the robot that takes care of us."

Grant grinned at the dog. "What do you want, Nathaniel?"

"I want to talk to you," said Nathaniel. "You've talked to everyone else. To Bruce and Grandpa. But you haven't talked to me and I'm the one that found you."

"O.K.," invited Grant. "Go ahead and talk."

"You're worried," said Nathaniel.

Grant wrinkled his brow. "That's right. Perhaps I am. The human race is always worried. You should know that by now, Nathaniel."

"You're worrying about Juwain. Just like Grandpa is."

"Not worrying," protested Grant. "Just wondering. And hoping."

"What's the matter with Juwain?" demanded Nathaniel. "And who is he and—"

"He's no one, really," declared Grant. "That is, he was someone once, but he died years ago. He's just an idea now. A problem. A challenge. Something to think about."

"I can think," said Nathaniel, triumphantly. "I think a lot, sometimes. But I mustn't think like human beings. Bruce tells me I mustn't. He says I have to think dog thoughts and let human thoughts alone. He says dog thoughts are just as good as human thoughts, maybe a whole lot better."

Grant nodded soberly. "There is something to that, Nathaniel. After all, you must think differently than man. You must—"

"There's lots of things that dogs know that men don't know," bragged Nathaniel. "We can see things and hear things that men can't see nor hear. Sometimes we howl at night, and people cuss us out. But if they could see and hear what we do they'd be scared too stiff to move. Bruce says we're . . . we're—"

"Psychic?" asked Grant.

"That's it," declared Nathaniel. "I can't remember all them words."

Grant picked his pajamas off the table.

"How about spending the night with me, Nathaniel? You can have the foot of the bed."

Nathaniel stared at him round eyed. "Gee, you mean you want me to?"

"Sure I do. If we're going to be partners, dogs and men, we better start out on an even footing now."

"I won't get the bed dirty," said Nathaniel. "Honest I won't. Oscar gave me a bath tonight."

He flipped an ear.

"Except," he said, "I think he missed a flea or two."

Grant stared in perplexity at the atomic gun. A handy thing, it performed a host of services, ranging from cigarette lighter to deadly weapon. Built to last a thousand years, it was foolproof, or so the advertisements said. It never got out of kilter — except now it wouldn't work.

He pointed it at the ground and shook it vigorously and still it didn't work. He tapped it gently on a stone and got no results.

Darkness was dropping on the tumbled hills. Somewhere in the distant river valley an owl laughed irrationally. The first stars, small and quiet, came out in the east and in the west the green-tinged glow that marked the passing of the sun was fading into night.

The pile of twigs was laid before the boulder and other wood lay near at hand to keep the campfire going through the night. But if the gun wouldn't work, there would be no fire.

Grant cursed under his breath, thinking of chilly sleeping and cold rations.

He tapped the gun on the rock again, harder this time. Still no soap.

A twig crunched in the dark and Grant shot bolt upright.

Beside the shadowy trunk of one of the forest giants that towered into the gathering dusk, stood a figure, tall and gangling.

"Hello," said Grant.

"Something wrong, stranger?"

"My gun—" replied Grant, then cut short the words. No use in letting this shadowy figure know he was unarmed.

The man stepped forward, hand outstretched.

"Won't work, eh?"

Grant felt the gun lifted from his grasp.

The visitor squatted on the ground, making chuckling noises. Grant strained his eyes to see what he was doing, but the creeping darkness made the other's hands an inky blur weaving about the bright metal of the gun.

Metal clicked and scraped. The man sucked in his breath and laughed. Metal scraped again and the man arose, holding out the gun.

"All fixed," he said. "Maybe better than it was before."

A twig crunched again.

"Hey, wait!" yelled Grant, but the man was gone, a black ghost moving among the ghostly trunks.

A chill that was not of the night came seeping from the ground and traveled slowly up Grant's body. A chill that set his teeth on edge, that stirred the short hairs at the base of his skull, that made goose flesh spring out upon his arms.

There was no sound except the talk of water whispering in the dark, the tiny stream that ran just below the campsite.

Shivering, he knelt beside the pile of twigs, pressed the trigger. A thin

blue flame lapped out and the twigs burst into flame.

Grant found old Dave Baxter perched on the top rail of the fence, smoke pouring from the short-stemmed pipe almost hidden in his whiskers.

"Howdy, stranger," said Dave. "Climb up and squat a while."

Grant climbed up, stared out over the corn-shucked field, gay with the gold of pumpkins.

"Just walkin'?" asked old Dave. "Or snoopin'?"

"Snooping," admitted Grant.

Dave took the pipe out of his mouth, spat, put it back in again. The whiskers draped themselves affectionately, and dangerously, about it.

"Diggin'?" asked old Dave.

"Nope," said Grant.

"Had a feller through here four, five years ago," said Dave, "that was worse'n a rabbit dog for diggin'. Found a place where there had been an old town and just purely tore up the whole place. Pestered the life out of me to tell him about the town, but I didn't rightly remember much. Heard my grandpappy once mention the name of the town, but danged if I ain't forgot it. This here feller had a slew of old maps that he was all the time wavin' around and studying, tryin' to figure out what was what, but I guess he never did know."

"Hunting for antiques," said Grant.

"Mebbe," old Dave told him. "Kept out of his way the best I could. But he wasn't no worse'n the one that was tryin' to trace some old road that run through this way once. He had some maps, too. Left figurin' he'd found it and I didn't have the heart to tell him what he'd found was a path the cows had made."

He squinted at Grant cagily.

"You ain't huntin' no old roads, be you?"

"Nope," said Grant. "I'm a census taker."

"You're what?"

"Census taker," explained Grant. "Take down your name and age and where you live."

"What for?"

"Government wants to know," said Grant.

"We don't bother the gov'ment none," declared old Dave. "What call's the gov'ment got botherin' us?"

"Government won't bother you any," Grant told him. "Might even take a notion to pay you something some day. Never can tell."

"In that case," said old Dave. "it's different."

They perched on the fence, staring across the fields. Smoke curled up from a chimney hidden in a sunny hollow, yellow with the flame of birches. A creek meandered placidly across a dun autumn-colored meadow and beyond it climbed the hills, tier on tier of golden maple trees.

Hunched on the rail, Grant felt the heat of the autumn sun soak into his back, smelled the stubbled field.

A good life, he told himself. Good crops, wood to burn, plenty

of game to hunt. A happy life.

He glanced at the old man huddled beside him, saw the unworried wrinkles of kindly age that puckered up his face, tried for a moment to envision a life like this—a simple, pastoral life, akin to the historic days of the old American frontier, with all the frontier's compensations, none of its dangers.

Old Dave took the pipe out of his face, waved it at the field.

"Still lots of work to do," he announced, "but it ain't agittin' done. Them kids ain't worth the power to blow 'em up. Huntin' all the time. Fishin' too. Machinery breakin' down. Joe ain't been around for quite a spell. Great hand at machinery, Joe is."

"Joe your son?"

"No. Crazy feller that lives off in the woods somewhere. Walks in and fixes things up, then walks off and leaves. Scarcely ever talks. Don't wait for a man to thank him. Just up and leaves. Been doin' it for years now. Grandpappy told me how he first came when he was a youngster. Still comin' now."

Grant gasped. "Wait a second. It can't be the same man."

"Now," said old Dave, "that's the thing. Won't believe it, stranger, but he ain't a mite older now than when I first saw him. Funny sort of cuss. Lots of wild tales about him. Grandpappy always told about how he fooled around with ants."

"Ants!"

"Sure. Built a house—glasshouse, you know, over an ant hill and heated it, come winter. That's what grandpappy always said. Claimed he'd seen it. But I don't believe a word of it. Grandpappy was the biggest liar in seven counties. Admitted it hisself."

A brass-tongued bell clanged from the sunny hollow where the chimney smoked.

The old man climbed down from the fence, tapped out his pipe, squinting at the sun.

The bell boomed again across the autumn stillness.

"That's ma," said old Dave. "Dinner's on. Squirrel dumplings, more than likely. Good eatin' as you ever hooked a tooth into. Let's get a hustle on."

A crazy fellow who came and fixed things and didn't wait for thanks. A man who looked the same as he did a hundred years ago. A chap who built a glasshouse over an ant hill and heated it, come winter.

It didn't make sense and yet old Baxter hadn't been lying. It wasn't another one of those tall yarns that had sprung up and still ran their course out here in the backwoods, amounting now to something that was very close to folklore.

All of the folklore had a familiar ring, a certain similarity, a definite pattern of underlying wit that tagged it for what it was. And this wasn't it. There was nothing humorous, even to the backwoods mind, in housing and heating an ant hill. To qualify for humor a tale like that would have to have a snapper, and this tale didn't have one.

Grant stirred uneasily on the

cornshuck mattress, pulling the heavy quilt close around his throat.

Funny, he thought, the places that I sleep in. Tonight a cornshuck mattress, last night an open campfire, the night before that a soft mattress and clean sheets in the Webster house.

The wind sucked up the hollow and paused on its way to flap a loose shingle on the house, came back to flap it once again. A mouse skittered somewhere in the darkened place. From the bed across the loft came the sound of regular breathing —two of the Baxter younger fry slept there.

A man who came and fixed things and didn't wait for thanks. That was what had happened with the gun. That was what had been happening for years to the Baxter's haywire farm machinery. A crazy feller by the name of Joe, who didn't age and had a handy bent at tinkering.

A thought came into Grant's head, he shoved it back, repressed it. There was no need of arousing hope. Snoop around some, ask guarded questions, keep your eyes open, Grant. Don't make your questions too pointed or they'll shut up like a clam.

Funny folk, these ridge runners. People who had no part of progress, who wanted no part of it. People who had turned their backs upon civilization, returning to the unhampered life of soil and forest, sun and rain.

Plenty of room for them here on Earth, lots of room for everyone, for Earth's population had dwindled in the last two hundred years, drained by the pioneers who flocked out to settle other planets, to shape the other worlds of the system to the economy of mankind.

Plenty of room and soil and game.

Maybe it was the best way after all. Grant remembered he had often thought that in the months he had tramped these hills. At times like this, with the comfort of the handmade quilt, the rough efficiency of the cornshuck mattress, the whisper of the wind along the shingled roof. Times like when he sat on the top rail of the fence and looked at the groups of golden pumpkins loafing in the sun.

A rustle came to him across the dark, the rumble of the cornshuck mattress where the two boys slept. Then the pad of bare feet coming softly across the boards.

"You asleep, mister," came the whisper.

"Nope. Want to crawl in with me?"

The youngster ducked under the cover, put cold feet against Grant's stomach.

"Grandpappy tell you about Joe?"

Grant nodded in the dark. "Said he hadn't been around, lately."

"Tell you about the ants?"

"Sure did. What do you know about the ants?"

"Me and Bill found them just a little while ago, keeping it a secret. We ain't told anyone but you. But we gotta tell you, I guess. You're from the gov'ment."

"There really was a glasshouse over the hill?"

"Yes, and . . . and—" the boy's voice gasped with excitement, "and that ain't all. Them ants had carts and there was chimneys coming out of the hill and smoke comin' from the chimneys. And . . . and—"

"Yes, what else?"

"We didn't wait to see anything else. Bill and me got scared. We ran."

The boy snuggled deeper into the cornshucks. "Gee, ever hear of anything like it? Ants pulling carts!"

The ants *were* pulling carts. And there *were* chimneys sticking from the hill, chimneys that belched tiny, acrid puffs of smoke that told of smelting ores.

Head throbbing with excitement, Grant squatted beside the nest, stared at the carts that trundled along the roads leading off into the grass-roots land. Empty carts going out, loaded carts coming back—loaded with seeds and here and there dismembered insect bodies. Tiny carts, moving rapidly, bouncing and jouncing behind the harnessed ants!

The glassite shield that once had covered the nest still was there, but it was broken and had fallen into disrepair, almost as if there were no further use of it, as if it had served a purpose that no longer existed.

The glen was wild, broken land that tumbled down toward the river bluffs, studded with boulders, alternating with tiny patches of meadow and clumps of mighty oaks. A hushed place that one could believe had never heard a voice except the talk of wind in treetops and the tiny voices of the wild things that followed secret paths.

A place where ants might live undisturbed by plow or vagrant foot, continuing the millions of years of senseless destiny that dated from a day before there was anything like man—from a day before a single abstract thought had been born on the Earth. A closed and stagnant destiny that had no purpose except that ants might live.

And now someone had uncoiled the angle of that destiny, had set it on another path, had given the ants the secret of the wheel, the secret of working metals—how many other cultural handicap or handicaps had been lifted from this ant hill, breaking the bottleneck of progress.

Hunger pressure, perhaps, would be one cultural handicap that would have been lifted for the ants. Providing of abundant food which gave them leisure for other things beyond the continued search for sustenance.

Another race on the road to greatness, developing on the social basis that had been built in that long gone day before the thing called Man had known the stir of greatness.

Where would it lead? What would the ant be like in another million years? Would ant and Man—could ant and Man find any common denominator as dog and Man would find for working out a co-operative destiny?

Grant shook his head. That was something the chances were against.

For in dog and Man ran common blood, while ant and Man were things apart, life forms that were never meant to understand the other. They had no common basis such as had been joined in the paelolithic days when dog and Man dozed beside a fire and watched against the eyes that roved out in the night.

Grant sensed rather than heard the rustle of feet in the high grass back of him. Erect, he whirled around and saw the man before him. A gangling man with stooping shoulders and hands that were almost hamlike, but with sensitive fingers that tapered white and smooth.

"You are Joe?" asked Grant.

The man nodded. "And you are a man who has been hunting me."

Grant gasped. "Why perhaps I have. Not you personally, perhaps, but someone like you."

"Someone different," said Joe.

"Why didn't you stay the other night?" asked Grant. "Why did you run off? I wanted to thank you for fixing up the gun."

Joe merely stared at him, unspeaking, but behind the silent lips Grant sensed amusement, a vast and secret amusement.

"How in the world," asked Grant, "did you know the gun was broken? Had you been watching me?"

"I heard you think it was."

"You heard me think?"

"Yes," said Joe. "I hear you thinking now."

Grant laughed, a bit uneasily. It was disconcerting, but it was logical. It was the thing that he should have expected—this and more.

He gestured at the hill. "Those ants are yours?"

Joe nodded and the amusement again was bubbling just behind his lips.

"What are you laughing for?" snapped Grant.

"I am not laughing," Joe told him and somehow Grant felt rebuked, rebuked and small, like a child that has been slapped for something it should have known better than to do.

"You should publish your notes," said Grant. "They might be correlated with the work that Webster's doing."

Joe shrugged his shoulders. "I have no notes," he said.

"No notes!"

The lanky man moved toward the ant hill, stood staring down at it. "Perhaps," he declared, "you've figured out why I did it."

Grant nodded gravely. "I might have wondered that. Experimental curiosity, more than likely. Maybe compassion for a lower form of life. A feeling, perhaps, that just because man himself got the head start doesn't give him a monopoly on advancement."

Joe's eyes glittered in the sunlight. "Curiosity — maybe. I hadn't thought of that."

He hunkered down beside the hill. "Ever wonder why the ant advanced so far and then stood still? Why he built a nearly perfect social organization and let it go at that? What it was that stopped him in his tracks?"

"Hunger pressure, for one thing," Grant said.

"That and hibernation," declared the lanky man. "Hibernation, you see, wiped out the memory pattern from one season to the next. Each spring they started over, began from scratch again. They never were able to benefit from past mistakes, cash in on accumulated knowledge."

"So you fed them—"

"And heated the hill," said Joe, "so they wouldn't have to hibernate. So they wouldn't have to start out fresh with the coming of each spring."

"The carts?"

"I made a couple, left them there. It took ten years, but they finally figured out what they were for."

Grant nodded at the smokestacks.

"They did that themselves," Joe told him.

"Anything else?"

Joe lifted his shoulders wearily. "How should I know?"

"But, man, you watched them. Even if you didn't keep notes, you watched."

Joe shook his head. "I haven't laid eyes on them for almost fifteen years. I only came today because I heard you here. These ants, you see, don't amuse me any more."

Grant's mouth opened, then shut tight again. Finally, he said: "So that's the answer. That's why you did it. Amusement."

There was no shame on Joe's face, no defense, just a pained ex-

pression that said he wished they'd forget all about the ants. His mouth said: "Sure. Why else?"

"That gun of mine. I suppose that amused you, too."

"Not the gun," said Joe.

Not the gun, Grant's brain said. Of course, not the gun you dumbbell. But you yourself. You're the one that amused him. And you're amusing him right now.

Fixing up old Dave Baxter's farm machinery, then walking off without a word, doubtless had been a screaming joke. And probably he'd hugged himself and rocked for days with silent mirth after that time up at the Webster house when he'd pointed out the thing that was wrong with old Thomas Webster's space drive.

Like a smart-Aleck playing tricks on an awkward puppy.

Joe's voice broke his thoughts.

"You're an enumerator, aren't you? Why don't you ask me the questions? Now that you've found me you can't go off and not get it down on paper. My age especially. I'm one hundred sixty-three and I'm scarcely adolescent. Another thousand years at least."

He hugged his knobby knees against his chest and rocked slowly back and forth. "Another thousand years and if I take good care of myself—"

"But that isn't all of it," Grant told him, trying to keep his voice calm. "There is something more. Something that you must do for us."

"For us?"

"For society," said Grant. "For the human race."

"Why?"

Grant stared. "You mean that you don't care."

Joe shook his head and in the gesture there was no bravado, no defiance of convention. It was just blunt statement of the fact.

"Money?" suggested Grant.

Joe waved his hands at the hills about them, at the spreading river valley. "I have this," he said. "I have no need of money."

"Fame, perhaps?"

Joe did not spit, but his face looked like he had.

"The gratitude of the human race?"

"It doesn't last," said Joe and the old mockery was in his words, the vast amusement just behind his lips.

"Look, Joe," said Grant and hard as he tried to keep it out, there was pleading in his voice, "this thing I have for you to do is important . . . important to generations yet to come, important to the human race, a milestone in our destiny—"

"And why should I," asked Joe, "do something for someone who isn't even born yet? Why should I look beyond the years of my own life? When I die, I die, and all the shouting and the glory, all the banners and the bugles will be nothing to me. I will not know whether I lived a great life or a very poor one."

"The race," said Grant.

Joe laughed, a shout of laughter. "Race preservation, race advancement. That's what you're getting

at. Why should you be concerned with that? Or I?"

The laughter lines smoothed out around his mouth and he shook a finger in mock admonishment. "Race preservation is a myth . . . a myth that you all have lived by—a sordid thing that has arisen out of your social structure. The race ends every day. When a man dies the race ends for him—so far as he's concerned there is no longer any race."

"You just don't care," said Grant.

"That," declared Joe, "is what I've been telling you."

He squinted at the pack upon the ground and a flicker of a smile wove about his lips. "Perhaps," he suggested, "if it interested me—"

Grant opened up the pack, brought out the portfolio. Almost reluctantly he pulled out the thin sheaf of papers, glanced at the title:

"Unfinished Philosophical—"

He handed it across, sat watching as Joe read swiftly and even as he watched he felt the sickening wrench of terrible failure closing on his brain.

Back in the Webster house he had thought of a mind that knew no groove of logic, a mind unhampered by four thousand years of moldy human thought. That, he had told himself, might do the trick.

And here it was. But it still was not enough. There was something lacking—something he had never thought of, something the men in Geneva had never thought of, either. Something, a part of the human make-up, that everyone up to this moment, had taken for granted.

A social pressure, the thing that had held the human race together through all millennia—held the human race together as a unit just as hunger pressure had held the ants enslaved to a social pattern.

The need of one human being for the approval of his fellow humans, the need for a certain cult of fellowship—a psychological, almost physiological need for approval of one's thought and action. A force that kept men from going off at unsocial tangents, a force that made for social security and human solidarity, for the working together of the human family.

Men died for that approval, sacrificed for that approval, lived lives that they loathed for that approval. For without it a man was on his own, an outcast, an animal that had been driven from the pack.

It had led to terrible things, of course—to mob psychology, to racial persecution, to mass atrocities in the name of patriotism or religion. But likewise it had been the sizing that held the race together, the thing that from the very start had made human society possible.

And Joe didn't have it. Joe didn't give a care. He didn't care what anyone thought of him. He didn't care whether anyone approved or not.

Grant felt the sun hot upon his back, heard the whisper of the wind that walked in the trees above him. And in some thicket a bird struck up a song.

Was this the trend of mutancy? This sloughing off of the basic instinct that made man a member of the race.

Had this man in front of him, reading the legacy of Juwain, found within himself, through his mutancy, a life so full that he could dispense with the necessity for the approval of his fellows? Had he, finally, after all these years, reached that stage of civilization where a man stood independent, disdaining all the artificiality of society?

Joe looked up.

"Very interesting," he said. "Why didn't he go ahead and finish it?"

"He died," said Grant.

Joe clucked his tongue inside his cheek. "He was wrong in one place." He flipped the pages, jabbed with a finger. "Right here. That's where the error cropped up. That's what bogged him down."

Grant stammered. "But . . . but there shouldn't be an error. He died, that's all. He died before he finished it."

Joe folded the manuscript neatly, tucked it in his pocket.

"Just as well," he said. "He probably would have botched it, anyhow."

"Then you can finish it? You can—"

There was, Grant knew, no use of going on. He read the answer in Joe's eyes.

"You really think," said Joe and his words were terse and measured, "that I'd turn this over to you squalling humans?"

Grant shrugged in defeat. "I suppose not. I suppose I should have known. A man like you—"

"I," said Joe, "can use this thing myself."

He rose slowly, idly swung his foot, plowing a furrow through the ant hill, toppling the smoking chimneys, burying the toiling carts.

With a cry, Grant leaped to his feet, blind anger gripping him, blind anger driving the hand that snatched out his gun.

"Hold it!" said Joe.

Grant's arm halted with the gun still pointing toward the ground.

"Take it easy, little man," said Joe. "I know you'd like to kill me, but I can't let you do it. For I have plans, you see. And after all, you wouldn't be killing me for the reason that you think."

"What difference would it make why I killed you?" rasped Grant. "You'd be dead, wouldn't you? You wouldn't be loose with Juwain's philosophy."

"But," Joe told him, almost gently, "that's not why you would kill me. You'd do it because you're sore at me for mussing up the ant hill."

"That might have been the reason first," said Grant. "But not now—"

"Don't try it," said Joe. "Before you ever pressed the trigger you'd be meat yourself."

Grant hesitated.

"If you think I'm bluffing," Joe taunted him, "go ahead and call me."

For a long moment the two stood face to face, the gun still pointing at the ground.

"Why can't you throw in with us?" asked Grant. "We need a man like you. You were the one that showed old Tom Webster how to build a space drive. The work you've done with ants—"

Joe was stepping forward, swiftly, and Grant heaved up the gun. He saw the fist coming at him, a hamlike, powerful fist that fairly whistled with its vicious speed.

A fist that was faster than his finger on the trigger.

Something wet and hot was rasping across Grant's face and he lifted a hand and tried to brush it off.

But it went on, licking across his face.

He opened his eyes and Nathaniel did a jig in front of them.

"You're all right," said Nathaniel. "I was so afraid—"

"Nathaniel!" croaked Grant. "What are you doing here?"

"I ran away," Nathaniel told him. "I want to go with you."

Grant shook his head. "You can't go with me. I have far to go. I have a job to do."

He got to his hands and knees and felt along the ground. When his hand touched cold metal, he picked it up and slid it in the holster.

"I let him get away," he said, "and I can't let him go. I gave him something that belonged to all mankind and I can't let him use it."

"I can track," Nathaniel told him. "I track squirrels like everything."

"You have more important things to do than tracking," Grant told the dog. "You see, I found out something today. Got a glimpse of a certain trend—a trend that all mankind may follow. Not today nor tomorrow, nor even a thousand years from now. Maybe never, but it's a thing we can't overlook. Joe may be just a little farther along the path than the rest of us and we may be following faster than we think. We may all end up like Joe. And if that is what is happening, if that is where it all will end, you dogs have a job ahead of you."

Nathaniel stared up at him, worried wrinkles on his face.

"I don't understand," he pleaded. "You use words I can't make out."

"Look, Nathaniel. Men may not always be the way they are today. They may change. And if they do, you have to carry on, you have to take the dream and keep it going. You'll have to pretend that you are men."

"Us dogs," Nathaniel pledged, "will do it."

"It won't come for thousands and thousands of years," said Grant. "You will have time to get ready. But you must know. You must pass the word along. You must not forget."

"I know," said Nathaniel. "Us dogs will tell the pups and the pups will tell their pups."

"That's the idea," said Grant.

He stooped and scratched Nathaniel's ear and the dog, tail wagging to a stop, stood and watched him climb the hill.

THE END.

All he needed to do was to figure out the properties of a perfect paint—and how to get rid of it before it killed him!

A Can of Paint

by A. E. VAN VOGT

Illustrated by Orban

The landing jets worked like a dream. The small machine settled gently on an open meadow in a long shallow, brilliantly green valley. A few minutes later, the first Tellurian ever to set foot on Venus, stepped gingerly down, and stood on the lush grass beside his cigar-shaped spaceship.

Kilgour drew a deep, slow breath. The air was like wine, a little high in oxygen content, but tinglingly sweet and fresh and warm.

He had a sudden conviction that he had come to paradise. He pulled out his notebook, and wrote down the impression. Any thoughts like that would be worth gold when he got back to Earth. And he would darn well need the money, too.

He finished the writing, and he was putting away his notebook,

when he saw the cube.

It was lying on its side on the grass in a slight indentation, as if it had fallen from something not very high. It was a translucent crystalline block with a handle. It was about eight inches square, and it shone with a dull luster like ivory. It seemed to have no purpose.

Kilgour brought some energy testers from the ship, and touched various parts of the crystal with the wire ends. Electricity: negative; electronic: negative. It was not radioactive, nor did it respond to any of the acids he used. It refused to conduct a current of electricity, and likewise rejected the more feverish advances of the electronic enveloper.

He put on a rubber glove, and touched the handle. Nothing happened. He slid his gloved fingers caressingly over the cube, and finally gripped the handle tightly. Still there was no response.

Kilgour hesitated. Then tugged at the thing. It lifted easily; its weight he estimated at about four pounds. He set it down again and, stepping back, surveyed it. A slow excitement was starting in his brain. It tingled thrillingly down to his toes, as the implications of what was here penetrated.

The cube was a manufactured article. There was intelligent life on Venus.

He had spent a dreary year in space, wondering, hoping, dreaming about that. And here was evidence. *Venus was inhabited.*

Kilgour whirled towards the ship. Have to search for a city, he thought tensely. It didn't matter any more if he wasted fuel. Replacements were now possible.

He was still in the act of turning, when he saw the cube out of the corner of his eyes. His enthusiasm suffered a pause.

What was he going to do with it? It would be foolish to leave it here. Once he departed from this valley, never would he find it again. Wise, though, to be careful about what he took aboard his ship. Suppose the cube had been left here for him to find?

Ridiculous. The idea was so fantastic that some of his doubts faded. A couple of more tests, he decided, and then—

He took off his glove, and gingerly touched the handle with his bare finger.

"I contain paint!" something said into his mind.

Kilgour jumped backward. "Huh!" he gulped.

He looked around wildly. But he was alone in a green valley that stretched into distance. He returned his attention to the crystal block. Again, he touched the handle.

"I contain paint." This time there was no doubt. The thought was clear and sharp in his mind.

Kilgour straightened slowly. He stood, mentally dazzled, staring down at his find. It took a long moment to start his thought on the uphill climb of imagining the technological stature of a race that could turn out such a container.

His mind soared and soared; and

then reluctantly retreated. Amazement came. Because, simple though it was, nothing in the science of man even foreshadowed such a development.

A container for paint that said—what it had said. A can labeled with a self-identifying thought.

Kilgour began to grin. His long, homely face twisted with good humor. His gray-green eyes lighted up. His lips parted, revealing even, white teeth. He laughed joyously.

A can of paint! The paint would probably have other ingredients than white lead, linseed oil and a coloring oxide. But that was something to explore later.

For the moment, possession was enough. No matter what else he discovered on Venus, his trip was already paid for. It was the simple, used-every-day things that made fortunes.

Briskly, Kilgour reached down, grabbed the handle with his bare hand, and started to lift.

He had got it off the ground, when a dazzlingly bright liquid squirted from it onto his chest. It spread quickly over his body, clinging like glue, yet running swiftly. It was white when it started, but it changed to red, yellow, blue, violet, then it spread into a myriad of shades.

He stood finally, his drenched clothes flashing all the colors of the rainbow. And at first he was furious rather than alarmed.

He began to strip. He was wearing a pullover sweat shirt and a pair of sport shorts; nothing else. The two pieces sparkled like varicolored fire as, with a synchronized jerk, he unloosed his belt, and pulled the shirt up over his head.

He could feel the liquid running down over his bare body; and it was not until he had removed his shirt—his shorts had fallen around his ankles—that he noticed an odd fact.

The paint, which had been mostly on his shirt, had flowed completely off it and onto his skin. Not a drop had fallen to the ground. And his shirt was clean as a whistle.

All the paint was on his body. It glowed as it thinned out over a greater surface. It sparkled and shimmered like a flame seen through a prism, as he wiped at it with his shirt. But it didn't come off.

Frowning, he pushed at it with his hands. It clung to his fingers with a warm stickiness. It bobbed and danced with color, as he shoved it groundward. It went down one place, and came up another.

It was a unit, of which no portion would separate from any other portion. It flowed so far, then no farther. It assumed every conceivable shape. But always it remained one piece. Like a vivid tinted, immensely flexible shawl draped in various patterns, it altered its form, not its essential oneness.

After ten minutes, he was still no nearer getting rid of it.

"'Paint,'" Kilgour read aloud out of his medical book, "'can be removed by applying turpentine.'"

There was turpentine in his storeroom. He secured the bottle, and climbed out of the ship again. He

poured a generous measure into the cupped palm of his hand, and applied it vigorously. That is, he started to apply it. The turpentine flowed out of his hand, and onto the ground.

The paint wouldn't permit itself to be touched by the liquid.

It took several attempts to convince the astounded Kilgour. But finally, still determined, he re-entered the ship. In quick succession, he tried gasoline, water, wine, even some of his precious rocket fuel.

The paint wouldn't make contact with any of them. He stepped under a shower. The water rained down on the portion of his body that was not covered by paint, a fine stinging spray of wetness. But there was no sensation at all where the paint clung.

And it definitely didn't wash off.

He filled his bathtub, and seated himself in it. The paint shinnied up his neck, and around his chin, and flowed over his mouth and nose. It didn't go in his nostrils or his mouth, but it covered both apertures.

Kilgour stopped breathing. He sat there for a moment, stubborn; and then he saw the paint was creeping up towards his eyes. He jumped out of the tub, and ducked his head into the water.

The paint retreated from his nose, hesitated at his mouth, and then sank back halfway towards the lower end of his chin. It seemed to find some anchor point there, for, no matter how deep or how often he ducked, it refused to go any lower.

Apparently, having reached his head, it was not prepared to give up that vantage point.

Kilgour spread a rubber mat on his favorite chair, and sat down to do some hard thinking. The whole business was ridiculous. He'd be the laughing stock of the solar system if it was ever found out that he had got himself into such a fantastic predicament.

By some accident, a can of Venusian paint had been dropped or lost on this uninhabited meadow; and here he was smeared with the stuff.

The quick way it had flowed over his mouth and nose showed that, though mindless, it could be deadly. Suppose it had refused to retreat an inch. He would have suffocated in a few minutes, and would now be lying dead in his bathtub.

Kilgour felt a chill climb his spine. The chill remained even after it struck him that he could easily have forced a funnel into his mouth, and breathed that way. The chill remained because it was only accident that the incredible stuff hadn't climbed up over his eyes.

He pictured a blind, suffocating man searching in a roomy storeroom for a funnel.

It took a long minute for his normally sunny disposition to make a partial comeback. He sat stiff, forcing his mind.

Paint—that jumped out of a can, showed no sign of drying, yet wasn't really a liquid, because it wouldn't soak into clothing or flow according to the law of gravity. And

wouldn't let liquid touch it.

Kilgour's mind paused there, in a sudden comprehension. Why, of course. Waterproof. He should have remembered. This was no ordinary paint. It was waterproof, rainproof, liquidproof—the ultimate paint.

Excitement surged along his nerves. He stood up jerkily, and began to pace the floor.

For twenty-five years, ever since the first of the super rockets had gushed out to the barren Moon and then to semibarren Mars, Venus had been the goal of explorers. Journeys there, however, had been forbidden until some means was discovered to overcome the danger of ships falling into the Sun.

That incandescent fate had befallen two ships. And it had been mathematically proven, not merely by cranks, that such a catastrophe would happen to every spaceship until the planets Earth and Venus attained a certain general position with relation to each other and Jupiter.

The ideal conditions were not due to occur for another twenty-eight years. But six months before Kilgour took off, a famous astronomer had pointed out that some of the conditions would prevail for years. The article caused a sensation among spacemen; and, though the government refused to withdraw its ban, Kilgour had heard that a high patrol officer had privately stated that he would look the other way if anybody started out. And that he would see to it that men of like mind carried out the necessary pre-flight inspections.

Several expeditions, ostensibly bound for Mars had been busily fitting up when Kilgour launched his small craft into space, Venus-bound.

Great things were expected of Venus. But not so great as this.

Kilgour stopped his pacing. A race that could develop a perfect paint, *anything* perfect, was going to prove worth knowing.

His thought ended. He had glanced down at his body. And now, he saw something that startled him. The paint, brilliant in its million facets of changing color, was spreading. At the beginning, it had covered about a quarter of his flesh. Now it covered a good third. If it kept on, it would soon overrun him from head to toe, eyes and ears and nose and mouth and all.

It was time he started figuring ways and means of removal. In earnest.

Kilgour wrote:

"A perfect paint should be waterproof and weatherproof as well as beautiful. It should also be easily removable."

He stared gloomily at the final sentence. And then, in a fit of temper, he flung down the pencil, and walked over to the bathroom mirror. He peered into it with a nasty smirk on his face.

"Pretty, aren't you!" he snarled at his blazing image. "Like a gypsy arrayed in dance finery."

The reality, he saw on second glance, was more chromatically splendid than that. He shone in

about ninety colors. The various combinations did not blur dully one into the other. They merged with a sharp brightness, that seemed to make even the most subtle shades project with intensity. Yet in some curious fashion the paint was not showy.

It was bright, but it did not hurt his eyes. It was brilliant, but it failed to jar his sense of good taste. He had come to sneer, but he remained several minutes to appraise its startling beauty.

He turned away at last. "If," he thought, "I could get a spoonful loose, I could put it into a retort and analyze it."

But he had tried that. He tried it again, with a sudden hope. As before the paint flowed into the spoon willingly, but when he raised the spoon, it flowed back onto his skin.

Kilgour procured a knife, and tried to hold the paint on his spoon. But when he lifted his hand, the paint slid between the blade and the spoon like so much oil.

Strength, Kilgour decided, his strength was not sufficient to press the knife tight onto the spoon edge. He headed for the storeroom. There was a small scoop there with a pressure cover. It was too round and too small; he could only force a little bit of the paint into it. And it took more than a minute to tighten the cover nuts with a wrench. But when he lifted the scoop, and opened it, there was a little pool of paint filling the bottom quarter of the scoop.

Kilgour walked over and sat hastily down in his chair. He had the curious wretched feeling that he was going to be ill. His brain reeled with relief; and it was several minutes before he could even think about his next move.

Logically, of course, he ought to remove painstakingly, and it would be painstaking, all the paint by the method he had just evolved. But first— He poured the paint in the scoop into a measuring retort. It measured just a little more than a desert spoonful.

There were, he estimated, at least five hundred such spoonsful on his body, and it would take him—he removed a second scoopful, timing himself—a fraction over two minutes for each operation.

One thousand minutes! Seventeen hours! Kilgour smiled ruefully, and went into the galley. He'd need food four or five times during such a period of time, and right now was one of the times.

While he was eating, he pondered the problem with the calmness of a man who has found a solution, and who, therefore, can afford to consider other possibilities.

Seventeen hours was a long time. Surely, now that he had some free paint, he could go into his small chemical lab, and, in short order, discover a dozen chemical reactions that would remove the entire mess from him in a few minutes.

Perhaps a larger, more complete laboratory might have yielded results. His was too small. The paint refused to react to any of the elements and solutions that he had. It wouldn't mix. It wouldn't com-

bine. It wouldn't burn. It was immune to acids and metals, and it did not seem to influence anything he used either catalytically or otherwise.

The paint was inert. Period.

"Of course," Kilgour said at last, explosively, to himself. "How could I have forgotten. The stuff would be weatherproof with a capital W. It's perfect paint."

He went to work with the scoop. He developed a dexterity with the wrench in screwing and unscrewing the nuts, that enabled him to remove a spoonful every three-quarters of a minute. He was so intent on maintaining the speed of operation that he had half a pailful of paint before it struck him with a tremendous shock that there was still as much paint as ever on his body.

Kilgour trembled with the thought that came. Feverishly, he measured the paint in the half-filled pail. And there was no question. He had emptied into the pail approximately as much as the original crystal container had squirted onto him—without affecting the quantity on his body.

Once applied, the ultimate paint was self-renewing.

He wrote that down at the bottom of his list of the paint's qualities. Then grew aware that he was perspiring freely. The sweat stood out in little foamy globules over the unpainted part of his body.

Kilgour's brain performed its newest leap of comprehension. He

snatched up his notebook, and jotted:

"The perfect paint is also—cold- and heatproof."

Within half an hour, it was impossible to be objective about it. The paint covered fully half of his body. His hard work had warmed him considerably. He was roasting from his own animal heat. And scared.

He thought shakily: "I've got to get out of here. I've got to find a Venusian city, and get an antidote for this stuff."

It didn't matter any more whether he was made ridiculous or not.

In a spasm of panic, he headed for the control board. His hand reached for the launching lever. But paused at the last instant.

The can! It had said: "I contain paint." Surely, it would also have directions for use of contents, and for subsequent removal.

"I'm a pie-eyed nut." Kilgour whispered to himself, as he ran, "I should have thought of that ages ago."

The crystal "can" lay on the grass, where he had left it. He snatched at it.

"I contain a quarter paint," it thought at him.

So he had squirted three quarters of the contents onto himself. It was an important thing to know. He'd be wise not to add the rest to the spreading horror that was enveloping him in an air-tight casing of liquid brilliance.

Cautiously, taking care not to lift the container from the ground, he fumbled over it with his bare hands. Almost instantly, he had his first response:

"Directions: Fix controllers around area to be painted, then apply. Paint will dry as soon as controlled area is covered. To remove, press darkener over paint for one!!?!!"

The incomprehensible word seemed to refer to a short period of time.

"Note," the thought continued, "darkeners may be purchased at your neighborhood hardware and paint stores."

Kilgour said ferociously: "Isn't that just dandy. I'll run over right now, and get me one."

In spite of his scathing words, he felt amazingly better. It was a practical world he had come to, not a nightmare planet, where creatures with ten eyes and eight legs moaned and yammered with instant alien hatred for human explorers. People who used paint wouldn't murder him out of hand.

Actually, that had been obvious all the time. Intelligence implied a semirational outlook, an orderly, organized universe. Naturally, not all nonhuman races would like human beings. But then, human beings had a habit of not liking each other.

If the container and the paint it had contained were criterions, the civilization of Venus was superior to that of man. Accordingly, the inhabitants would be above petty persecution. The fantastic, ludicrous mess he had gotten himself into, was basically solved by that fact.

But that didn't stop him from getting hotter and hotter under his coat of paint. It was time he found himself a Venusian.

He picked up the container, lifting it with his fingers from underneath. It thought at him:

"Ingredients of this paint, as per government requirements, are:

!?!?!—7%

?!?!?—13%

Liquid light—80%

"Liquid what?" said Kilgour aloud.

"Warning," came the thought. "This paint must not be allowed in proximity to volatile substances."

There was no explanation of that, though Kilgour waited for further thoughts. Apparently Venusians knew enough about their government regulations to obey them without question.

But just a minute. He had tried to put the paint in contact with the volatile substances, turpentine, gasoline, his rocket fuel and a couple of other explosives. And no harm done.

It seemed a silly regulation, if it didn't mean anything.

Kilgour set the can down, and headed once more for the control board. The launching lever was glass smooth to his palm, as he pulled it back until it clicked.

He sat braced, waiting for the automatic machinery to set off the potent violence of fired tubes.

Nothing happened.

Kilgour had a premonition. He jerked the launching lever back into place, then clicked it again.

And still there was no explosion.

His brain was reeling. The premonition was a living force. His whole body was heavy with the strength of it.

He had poured the rocket fuel back into its great tank after trying to wipe the paint off of his flesh with it. It had only been a few liters, but spacemen practiced queer economies. He had poured it back because the paint had not seemed to affect it in any way.

"Warning," the can had said, "This paint must not be allowed in proximity to volatile substances."

The inert stuff must have de-energized the eighteen thousand gallons in his one remaining fuel tank.

Try the radio again. He had started sending out signals when he was a million miles from Venus, and had listened and listened on his receiver. But the great void had been utterly blank.

Nevertheless, the Venusians *must* have such a thing. Surely, they would answer an emergency call.

But they didn't. Half an hour went by, and his calls went unheeded. His receiver remained silent; not so much as a burst of static came in on any wave length. He was alone in a universe of choking, crowding, growing, maddeningly colorful paint.

Darkener—liquid light— Perhaps it shone, not only in bright exterior light, so that if he turned off the lights—

His finger on the switch, he noticed for the first time how dark it was outside. His lock doors were

open; and slowly Kilgour walked over to them, and stared out into a night that was unbroken by starlight. The darkness, now that it had come, was intense. The clouds, of course, the eternal clouds of Venus —So bright was the sun at Venus' distance from it that in daytime the clouds were a protection that yet failed to more than dim the dazzling glare.

Now, at night, it was different. The clouds inclosed the planet like the walls and ceiling of a dark room. There was light, naturally. No planet near a sun or in the starry universe could be absolutely shut off from light and energy. His seleniometer would probably be registering well down into the hundred thousandths.

Kilgour brought his gaze down from the sky, and saw that the ground was brilliant with the light from his paint. Startled, he stepped out of the door, away from the interior light pouring out of the door of his ship. In the darkness to one side, his body glowed like a multiflamed but meaningless sign. He was so bright he lighted up the grass with patterns of dazzling color. He would be beautiful in death.

He pictured himself sprawled on the floor, covered from head to foot with paint. Eventually the Venusians would find him on this lonely meadow. Perhaps they would wonder what he was, where he had come from. It seemed obvious that they had no interplanetary travel.

Or had they? Kilgour's mind paused momentarily in its feverish gyrations. Was it possible the Venusians had deliberately refrained from making contact with human beings on Earth?

His brain couldn't concentrate on anything so unimportant. He went back into the ship. There was something, he was thinking, something he had been intending to do— He couldn't remember, unless it was the radio.

He switched it on. Then jumped jerkily as a mechanical voice came through:

"Earthman," it said, "are you there? Earthman, are you there?"

Kilgour clawed at the broadcaster. "Yes," he shouted finally. "Yes, I'm here. And in an awful mess. You must come at once."

"We know your predicament," said the flat-toned voice, "but we have no intention of rescuing you."

"Huh!" said Kilgour blankly.

"The container of paint," the voice went on, "was dropped from an invisible ship at the door of your machine a few moments after you landed. For some thousands of years we, whom you call Venusians, have watched with considerable uneasiness the development of civilization on the third planet of this sun system. Our people are not adventurous, nor is there a single war known to our recorded history. This is not to say that the struggle for survival has not been a bitter one.

"But we have an immensely more sluggish metabolism. Long ago our psychologists decided that space

flight was not for us. We have accordingly concentrated on the development of the purely Venusian way of life, so that when your ship approached our atmosphere, we were confronted with the necessity of deciding under what conditions we would establish relations with human beings.

"Our decision was to place the container of paint where you would find it. If you had failed to become entangled in the paint, we would have found some other method of testing you.

"Yes, you heard correctly. You have been, and are being tested. It seems you are failing the test, which is regrettable because it means that all people of your intelligence level or less will be barred from Venus.

"It has been very difficult to prepare tests for an alien race. And therefore, unless you can think your way through the test, you must die, so that the others who come after you may be given that or similar tests without knowing they are being tested, a prime requisite, it seems to us.

"Our intention is to find a human being who can solve the test we give him, after which we shall examine him with our instruments, and use the results as a measure for future visitors to Venus. All those whose intelligence is the same or higher than that of the successful candidate may come to our planet at will. Such is our unalterable determination.

"The person tested must also be able to leave Venus without help from us. You will readily see why that is necessary. Later, we shall help human beings to improve their spaceships.

"We are talking to you on a mechanical voice machine. The simple thoughts of the container were very laboriously impressed upon it by a complicated thought machine. It is so very difficult to establish communication with a non-Venusian brain.

"But now, good-bye. And, though this may sound strange, good luck still."

There was a click. All Kilgour's juggling with the dials produced no further sound.

He sat, all the ship's lights switched off, waiting for death. It was not a quiescent wait. His whole being palpitated with the will to live.

A darkener! What in the name of the ebony gods could it be?

The question was not new to Kilgour. For an hour he had sat in a room made fantastic by the blaze of color from his painted body. Had sat with his notebook, frantically going over the data he had.

A perfect paint made of—eighty percent liquid light. Light was light; the liquid must follow the same laws as the beam. Or must it? And what of it. A perfect paint capable of—

His mind refused to go through the list of qualities again. He felt physically ill, and time and again he fought off nausea.

He was so hot, it was like a fever. His feet he dangled in a pan of cold water; the theory of that had been

that if his blood had a cold area to run through, it wouldn't start boiling.

Actually, he knew that there was little danger of his temperature rising beyond its present almost unbearable point. There was such a thing as a limit to animal heat, particularly since it had penetrated at last that he had better stick to vitamin capsules and leave calories alone. Sheer insanity to take in fuel that manufactured body heat.

The gravest danger was that, with his body overrun by the paint, his pores would be unable to breath. Death would follow, how quickly Kilgour didn't know.

His ignorance didn't add to his peace of mind. Funny, though, that now he was reluctantly waiting for death, it was slow in coming.

The thought jarred Kilgour out of his developing incoherence.

Slow? He leaped to his feet. Because it *was* slow. He raced for the bathroom mirror. In a dizzy excitement, he peered at his image.

The paint still covered only half his body. It had not expanded during the past hour. *The past hour during which he had sat in darkness, except for the light from the paint.*

The paint, he noted more critically, had not lost ground. It still covered half his body. But, actually, that was natural. It was made to survive the black Venusian night.

Suppose, however, that he climbed into the greater darkness of his insulated-against-energy, empty fuel tank?

For half an hour, Kilgour sat in the tank; and then he climbed out again, shaky but still determined. Absolute darkness must be the solution, only he was missing something vital.

Obvious that if darkness alone was enough, then the fuel in his full fuel tank would by this time have cleared itself of the effects of the paint.

He tried the launcher; and there was no explosion. There must be something else.

"The problem," thought Kilgour, "is to drain off the eighty percent liquid light by providing a sufficient darkness, or by some other means. But it's almost impossible for darkness to be darker than it is inside that tank. It's insulated against outside energies. So what's wrong?"

The insulation! That was it.

The light from the paint merely reflected from the walls, and was reabsorbed by the paint. There was no place for the light to escape. Solution: Remove the insulation.

No, that was wrong. Kilgour's excitement sagged. With the insulation removed, the light would escape all right, but the outside energies would seep in to replace the escaped quantity. Better test that, though.

He did. And it was so. He came out, as covered with paint as ever.

He was standing there, in the grip of hopelessness, when the answer came, flashingly.

On the way back to Earth a month later, Kilgour ran into the radio signals of another ship approaching Venus. He explained what had happened. He finished:

"So you'll have no difficulty landing. The Venusians will give you the keys to their colorful cities."

"But just a minute!" came the puzzled reply. "I thought you said they'll only allow people whose intelligence is the same as, or greater than, that of the person who succeeds in their test. You must be quite a bright lad to have done so. But we're only a bunch of dumb spacemen. So where does that leave us?"

"You're sitting right on top of the world," Kilgour responded cheerfully. "And I mean Venus. Like most spacemen, I was never noted for my I.Q. My forte has always been vim, vigor and a spirit of adventure."

He concluded modestly: "Since I'm the measuring rod for admittance, I would say that, at a conservative estimate, ninety-nine percent of the human race can now visit Venus."

"But—"

Kilgour cut him off. "Don't ask me why their test was so simple. Maybe you'll understand when you see them." He frowned. "You're not going to like the Venusians, friend. But one look at their many-legged, multiarmed bodies will give you some idea of what they meant when they said it was difficult to figure out tests for alien minds. And now, any more questions?"

"Yes." Earnestly. "How *did* you get rid of that paint?"

Kilgour grinned. "Photocells. I took a bank of photo-converter cells into the tank with me. They absorbed the light from the paint. The rest, a fine, brownish dust, settled onto the floor; and I was a free man."

He laughed joyously. "Toodleoo! Be seeing you. I've got a cargo aboard that must be marketed."

"A cargo! Of what?"

"Paint. Thousands of cans of gorgeous paint. Earth shall in beauty live forevermore. And I've got the exclusive agency."

The two ships passed in the night of space, on to their separate destinations.

THE END.

Culture

by JERRY SHELTON

It was a culture, all right—but not in the more common, sociological sense. That was what they didn't understand at first—

Illustrated by Kramer

Bloodson was fat. He was also big. Big and fat—physically and financially. His huge body slouched motionless behind the immense black desk as the two stumbling men were brought in. Coldly, Bloodson watched the men, feet dragging, start the long trip toward him across the dazzling white floor. Effective!

Bloodson's small eyes blinked once as a stomach twinge sent him the pain message that already his newly installed stomach was developing the usual ulcers. His fourth stomach. This time he would accept no more excuses from the surgical staff. Punishment regardless—as soon as these men were efficiently dealt with of course.

The men halted wearily. No—not wearily. Bloodson tensed. No—these men were something else. Something—extra. Bloodson felt

the back of his mind groping hurriedly down into the deeper thought channels, searching swiftly for something as precedent. His nape hairs tingled as the mental processes spewed forth nothing. So there *was* something unusually wrong here. He, too, could feel it. His psycho-medics—the fools—had reported that much before they gave up. Well, he'd show his bungling staff why he *was* Bloodson.

His brain narrowed. Analyze: The men just stood there. Their ripped gray uniforms showed the violence with which all insignia had been removed. BLOODSON EXPLORATORY ENTERPRISES insignia. Faces: gray. Eyes: dull—no—unfocused. Breathing: slow. Tension: arms, fingers limp. Severe nervous shock—perhaps. Bloodson's nostrils flared. Only the shorter one showed anything: just the slow twitching of a muscle in his right cheek.

Bloodson took a flashing glance at the notes on his desk, then leaned his massive bulk forward and—his exquisite chair squeaked! It was terrifying—that squeak. In the unbelievable vastness of that soaring room of polished beauty and efficiency—that squeak sawed the nerves. Effective! Bloodson knew.

And at the proper instant, he followed with the one word, "Why?" Softly.

The word slithered across the sleek twenty feet of desk at the two men like an amorous serpent.

The cheek muscle of the shorter gray-faced man stopped for an instant—and then continued twitching. Slowly and rhythmically. The silence deepened. The room was motionless except for the cheek muscle.

Bloodson frowned. He moved his head to stare deep into the unfocused eyes of the shorter one. Instantly, his mind reeled under the smashing impact of something that brought a quick sweat to his armpits. Locked there—behind those two visual windows was a brain frozen in the tortured pattern of something too horrible for a human mind to bear. The fuses in that mind had burnt out under the terrible overload, leaving the helpless brain imprisoned in a swirling, chaotic jumble. Bloodson shivered, and snatched at his tottering reason. Attack!

He exploded. A mountain of flesh with a whipping saw-edged voice: "Do you men want me to have you psychoed?" Powerful as thunder crashes, rolling and booming, his amplified words smashed at the two men bouncing off to boom heavily against the distant walls of that vast room. "What explanation can you possibly offer? An entire expedition; millions of credits; years of work—all lost—except for you two stubborn, silent men."

Bloodson's voice dropped. "And the lives of the expedition. How many? If you won't talk"—the voice roared—"I have ways of *making* you talk. You killed nine of the men with your own hands! Why?"

The men stood there.

"What happened to the other men you didn't kill?"

Silence.

"I warn you—" Bloodson's voice was ominous. "I had a Keybell neuro-recorder on that ship. I can have you psychoed. I can have my psycho-medics reconstruct what happened. But I warn you—the drain of nervous energy from your bodies will make you blithering idiots for years to come. *Will* you talk?"

Silence.

Bloodson's teeth made an audible sound. Grinding. "Psycho them."

On the instant, the room light dimmed and men approached wheeling a machine. Heavy and squat. Pneumatic chairs swelled up out of the floor and the gray-faced men were forced into them as neat robed medics hurried up unreeling thin shining wires from the Keybell.

The short one's cheek muscle twitched rapidly as the flashing scalpels and tiny clamps inserted the trailing wires in the proper places. His jaw worked. Up and down. But no words came. His wooden-faced companion submitted, heedless of what the medics were doing to him.

Pressure of a switch; a low hum; and a pinkish milk-white cloud solidified in the center of the room. Vague images swirled and flickered. Jumbled voices—disjointed thoughts vibrated the room.

"You can do better than that," snapped Bloodson. "What am I paying you medics for?"

The swirling mist brightened and suddenly snapped into crystal-clear reality. Three dimensional. The interior of a spaceship—a group of men—and a young voice interlocked with a developing thought tendril of worry—

"—somehow there must be an explanation behind all this." Hardwick tried to ignore the hunger biting at his stomach and at the same time to make his voice sound convincing. "It's merely a missing factor that must be found." The growing worry nagged at him—Junior Command was an alarming thing when it unexpectedly turned into Senior Command complete with an emergency not in the books. "That missing factor means our survival or—"

Benton interrupted. "If you were going to say 'survival or not' —I'd change it to 'survival or we'll all go psycho!' Huh?" Benton's sharp face looked around as if expecting a laugh. Not a man laughed. Faces were grim.

Hardwick held on to his overstrung nerves. "Let me finish, Benton. The scouting parties should return any moment. If they have found no trace of Captain Houseworth or the others, then we must consider them—dead." He sensed the level stares of the crew. "And that passes the command definitely to me."

Hardwick looked each man in the eye. These men were irritable. Their enforced thirty-period diet of concentrates had played havoc with their nervous systems. And the fact that they knew he, acting as Senior Command, was just as green to deep space as they were, didn't exactly help things either. They

also knew that an immediate attempt had to be made to force out into the open the unseen, unguessed *something* that seemed to brood over this space-buried planet. He searched carefully for signs of open resentment to the fact that they realized their lives rested in his accurate judgment of the situation —and what must be done without delay. *Now!*

He felt a brief surge of confidence. He could detect no open resentment—yet. The next move was up to him.

Hardwick took a long breath. "Now"—he turned to the oil-splattered engineer—"what about the engines?"

The engineer sounded weary. "The same. I've explained to everybody until I'm sick of saying it. Those engines were in perfect working order until the third waking period after we landed. They just stopped. That's all. They are still perfect—except they won't work. Do you understand me?" His voice rose. "Every stinking tube and coil I've taken apart and put back half-a-dozen times. Everything's perfect. Except—"

"Except they don't work," finished Benton, dryly. "And how much longer can we function on the emergency batteries alone? Four more waking periods is tops. We won't have to worry about eating concentrates. That's *my* guess. Huh?"

Hardwick gave Benton a long look. "If our hydroponics hadn't disappeared, we wouldn't be eating concentrates. Those ponics were your responsibility and you've offered no satisfactory explanation as yet."

Benton shrugged. "I still don't see how those stupid, naked natives could have stolen forty tons of ponic tanks. Too big. Too heavy. The lock was guarded—or wasn't it? I'm not psychic. They don't seem to eat anyhow. We don't know yet if they *do* eat, or if they do, where they get it. No agriculture; no industries—all they seem to do is play. What a stupid—"

Metal-shod feet clanked through the open starboard lock. "*Something* around here isn't so stupid!" It was Doc Marshal, the medic. "Other scouting party back yet?" Wassel, the language expert, shouldered in past Marshal's bulky figure and sat down on the tool locker with a metallic thump.

Hardwick shook his head. "Did you find the captain or the men?"

A shadow flitted across Marshal's firm-jawed face. "No," bluntly. Then his face softened. "That makes you the skipper for sure, lad. Organization is your specialty, so you should do all right. Luck to you." He flexed his massive shoulders. "But we investigated that smaller black temple in the valley."

"And scared the blazes out of our well-balanced, beautifully integrated minds. Eh—Doc?" This from Wassel.

The slender sociologist in the corner stirred irritably. "If you will remember, I originally insisted

that it is dangerous to interfere with any civilization's temple of religion or to try to contact their females."

"Who said anything specific about religion or women?" countered Marshal. "What did we know about their religion or their women? Where are their females anyhow? Whoever heard of a race consisting *only* of males between the apparent ages of ten and fifty? Where are the kids? Where are the old ones?"

"Or the women?" rumbled Wassel from where he rested.

"A moment," cut in Hardwick smoothly. "While it is true we are the first expedition in this star cluster, I still don't think sociological problems should concern us too much. It was our luck and should be our good fortune to have discovered a planet rich in coal deposits. We've tried to trade fairly with these natives for their hydrocarbons which are so precious to our laboratories. Our mechanos have filled the ship's hold to capacity. Despite the fact they don't seem interested in payment—we will leave just payment, regardless."

"If we leave," said Benton softly.

The sociologist shot Benton a dark look. "We are discussing sociological considerations more important than a temporary emergency."

"Temporary?" Benton's jaw dropped.

The thin sociologist ignored him. "I admit that it is decidedly a departure from the norm for a humanoid race to not appear interested in gainful trade—or acceptance of gifts. These natives have upset me more than I care to admit. I've offered them everything from gaudy trinkets to sub-ether communicators. They are not interested. Therefore"—he put his fingertips together—"regardless of what we might leave as payment, assuming we take the coal, *if* the payment has no value to them—we are stealing the coal." He leaned back in his corner. "That is my point and I might add that it could be a clue toward that missing factor you mentioned."

Benton sniffed. "My bet is that the engines would start if we put that coal back where the mechanos got it. Might be something religious. Then maybe we'd get off this space-forsaken hunk of dirt. Although I don't see how in blazes they could mess up our engines like this. And I'm hungry." He looked at Wassel. "If we could find out where or how *they* eat . . . hey, Wassel . . . how about it? Why don't *you* ask them for a handout?"

Lips tight, Wassel said in a slow voice: "I am a qualified expert at analyzing, understanding and speaking any language—given time. Any language—"

"Except this one," said Benton.

"Benton," Wassel jumped to his feet. "If you don't quit interrupting people—"

"At ease," mocked Benton. "Everything's fine. In ten periods you've learned fifty-three words and seven gestures."

"He did his best," said Benton steadily. Then to Doc Marshal,

"What about that temple? What scared you?"

Marshal took a long breath before he answered. "We weren't exactly scared, we were just—" He groped for a word.

"We don't believe it," said Wassel in a flat voice.

Hardwick felt a slow chill settle on his heart.

"That's all we need," exploded the engineer. "More things we can't believe. Our skipper vanishes into nothing out of a locked control room. Men go for walks and don't come back. We don't know their language—we don't know their religion—we don't know anything—the ponics are gone—and my perfect engines won't work."

"What's getting into him?" snapped Benton. "While he sits here safe in the ship tinkering with a lot of tubes—we've all been out there floundering around deliberately trying to find something that will flatten our ears down if we do. I say give the coal back—"

Hardwick felt a curious sense of detachment as the hot words and accusations crackled back and forth in the cramped quarters. Let them argue. Let them talk. Somehow—somewhere, their anger-stimulated minds were going to find the thread they had all missed. A thread that could be captured and dragged out into the open where these usually cold scientific minds could logically weave it into the larger unseen, unguessed pattern. Nerves were reaching the breaking point. You couldn't blame the men. The

helplessness of trying to find something to fight and not finding it was unnerving to the finest of nervous systems. Especially nerves connected to growling stomachs.

Something had to be done. He was now Senior Command beyond a doubt—and the men looked for him for organization. Hardwick felt very young and troubled as he let his mind spiral back down into the room noise.

Marshal was speaking: "—as soon as we reached the door of the smaller black temple in the valley we stopped and checked the fuses on our blasters. The natives we had passed, as usual, practically ignored us."

"Up to this moment," broke in Wassel, "none of us had ventured inside a temple"—he nodded toward the sociologist—"in accordance with his ideas. We hadn't found a trace of the skipper, and Doc was in a frenzy of curiosity after seeing a native with an injured arm walk into that temple and then walk out a few moments later—perfectly healed. That's strong stuff to take without a look-see. Eh—Doc?"

Doc Marshal grunted.

"Besides," Wassel straightened up, "although limited by the small vocabulary I had picked up—I nevertheless had spent the entire previous waking period questioning one native whose attention I was lucky enough to hold. It was difficult as their language is coupled with gestures."

"Wait until you hear this," interjected Marshal. "It'll blast you."

"Well—I tried to find out what was meant by this sign," Wassel gestured, "accompanied by the long double-vowel sound." He looked around as if prepared for disbelief. "It means 'Going to Heaven'!"

"What?" The question came automatically in several voices.

"Yes—as far as I can understand—those natives merely live for the time until they go to a place which would be the same in our comprehension as—Heaven!" Wassel looked around the room nervously. *"But they also return!* Evidently they do it quite often. Go to Heaven and return to wait impatiently for the next time. When I pressed the native for more detailed information as to why and how the process took place he became vague—something about: *You had to come and get yourself."*

There was a dead silence. Wassel looked around.

Hardwick could sense the men—their minds already filled to the bursting point with contradictions—trying to digest that astounding bit of information—and then rejecting it. Their nerves, meanwhile, pulled a shade tighter.

Hardwick said quietly, "What happened inside, Doc?"

Wassel flushed a deep red. "I see—," the words came out heavily, "you don't think I correctly interpreted—"

"Forget it," interrupted Marshal. "I'll tell them something just as bad. I'll be brief. Inside the temple were a lot of gadgets we couldn't understand. So I'll skip that. We waited. Pretty soon, two natives

came in carrying another one between them. He was a mess—looked as if he had been mangled somehow. Well—they pushed open a red door at the far end and carried him in. Then they walked out and shut the door. They waited." Doc Marshal closed his eyes. "Whatever went on behind that red door I don't know, but a moment later that native walked out perfectly well."

A pause.

"That's all?" breathed the engineer in a hushed voice.

"That's all," said Wassel bluntly.

The room was silent save for the hiss of the emergency air circulation system.

Benton broke in sarcastically. "I don't suppose you even tried to look behind that door?"

Hardwick snapped himself to the alert. "Would you, Benton?"

Benton flustered, "Why . . . of course . . . I would have—"

"That's fine." Hardwick felt his duty of command give him strength. "Put on your body armor—that's what you and I are going to do."

Hardwick's further orders were interrupted as Miller returned from his scouting trip. He was alone. He walked through the air lock like a dead man. White-faced. Wordlessly he passed through the stunned group and continued to his quarters.

"Miller—" Hardwick's tone was sharp. And as Miller continued aft, stumbling heedlessly down the passageway, he motioned to Benton. "Get him."

Miller was brought back. He sat down like an automaton.

Hardwick felt prickles start up his back. "Where are Thompkins and McKesson?"

Miller began to shake his head from side to side. Slowly. But no words sounded. Long racking sobs began to twist him double. His eyes were dry. His mouth drooled wet. Roughly, Doc slapped him, but Miller continued to sob—long racking sobs as if his throat would burst.

Hardwick fought to steady his voice as he said: "Miller's one of our best men. What could do that to him?"

Marshal frowned and began to question Miller in a quiet voice until the words came, haltingly: "Outside . . . Thompkins . . . almost here . . . and then—" Miller shuddered. The voice stopped.

"Quick," rapped Hardwick, "see if Thompkins is outside. Find him."

When they dragged in what once must have been Thompkins, Hardwick clenched his hands until the nails dug deep into his palms. He saw the shocked crew turning away—sickened—trying desperately to control themselves. The engineer leaned over ill, while Benton stared wide-eyed, saying, "Get it out of here."

Hardwick had to force himself to look at the motionless thing on the deck. Twisted, torn, mangled—the body looked—yes—looked as if something tremendous and irresistible had forced half of it inside

out. Only half of it—that was what made it so revolting. Like a child's glove. A wet trail, splotched with crimson, indicated mutely the direction of the air lock.

Something cracked inside Hardwick's brain. "Enough!" he roared, "we've had enough of this. All men into their full battle armor—we're going to settle this or blast every stinking temple to ruins. Marshal—you and Wassel find out from Miller exactly what happened. Find out about McKesson—drug him if you have to—but get it out and tape it. I'll want to hear it before we leave. Now jump! On the double!"

That did it. The verbal explosion did it. The men moved swiftly, each to a job he had been trained for. This was something they could understand and relish. Action at last after endless waiting. Hardwick's orders rolled from the loudspeakers throughout. The ship vibrated to the thud of running feet, excited voices, the clank of body armor and the breaking out of battle equipment.

The assembly klaxon blared, and the men jammed the tiny room forward of the lock.

Hardwick counted them, ". . . twelve—thirteen. A baker's dozen. All right, men. This is it. We've been trying to handle this thing in a civilized way according to the book some brass hat writes sitting at a desk. By following the book we lost four men. That's four men too many. We've tried to think this thing through to learn what to fight—well, now we'll *find* it! Marshal play the tape you got from Miller."

The men were silent and attentive as Miller's halting voice, drug-deadened, filled the room: "Three of us . . . up to biggest temple . . top of the hill . . . Black . . . five miles square . . . five miles high . . . I guess . . . got to the door . . . big door or opening . . . yes . . . opening . . . McKesson volunteered to go in." A long pause. "He . . . went in the blackness . . . and . . . his torch and radio call just winked off—" Pause. "We waited long time . . . decided best return to ship . . . almost here when a wind and rustling noise . . . something came down . . . could see Thompkins struggle and something . . . twisted and turned him until . . . until—" A longer pause while Doc Marshal's voice was heard to say, "Might as well give him another shot." Then Miller: "Must have fainted because when I came to, I saw . . . I saw—" The sobbing started again.

Hardwick switched off the tape. "That's it men—whatever it is. We'll take a look at that temple first. Take along two semiportable blasters and extra-heavy duty fuses. Let's go."

The men marched, close formation, with a semiportable blaster wheeling front and rear through the town and past the outskirts. Without the heavy duty blasters the party could have reached the temple with the aid of their suit repulsors in a tenth of the time. But the walking felt good to their

ship-cramped muscles. The naked natives they passed only favored them with brief stares. The late afternoon sun glinted dully on their formidable battle armor as they climbed the hill to the square black temple. Far below, their ship dwindled until it resembled a tiny gold needle.

Hardwick halted before the opening. The building—if it was a building—was a solid black without seam or blemish. It erupted, squat and massive, five miles up into the air. What substance composed its walls he didn't try to guess or why or how or when such a building was built. The opening was only noticeable by being blacker than the walls. Experimentally, he flicked on his powerful hand torch and was surprised to see the opening swallow the intense beam like space itself. The opening seemed to be several hundred yards wide and about half a mile high. He couldn't be sure. What reason could a race of naked natives have for a thing like this?

With the men watching, Hardwick approached the opening and carefully thrust the head of his battle-ax into the blackness. It just disappeared. He felt nothing. He withdrew the weapon and examined it critically. Perfect. Careful to keep clear of the black veil—it seemed a veil—he again thrust the ax through and lowered it until it touched something solid at what should be floor level. He straightened up and drew back. As he turned, he noticed the setting sun was withdrawing before long black shadows that were slowly swallowing the ship in the valley beneath. A chill developed unaccountably. The Powers of Darkness? Hardwick muttered irritably at himself. He was being silly. The men were waiting.

"Hardwick!" It was a voice, full of alarm, crackling in over his headset. The men were running toward him and pointing at something behind his back.

He swung around, both hands tense on the handle of his heavy battle-ax. Something was stepping through the veil. It was a native. Bronzed and bare of any clothing. The native walked toward them, mouthing words and making gestures. In some sort of a way, Hardwick felt that he should know this native. As if he had known him somewhere.

The native walked over to Benton and said in perfect Earthian: "Well . . . I didn't think I looked that surprised. Come along now—"

Marshal gasped. "He speaks Earthian. Why, he looks like—"

"Seize him," ripped Hardwick as the native took the open-mouthed unresisting Benton by the arm and led him toward the dark opening.

One of the gunners whipped up his blaster and the native's eyes widened in alarm. "Don't," he screamed as the blaster leveled, "you don't understand . . . don't—"

The blast caught him deep in the shoulder and spun him around, hanging desperately on to Benton who seemed dazed by the nearness of the blast.

Dashing forward, Hardwick saw the native, with a last agonized gesture, push the numbed Benton through the yawning opening into the all engulfing darkness.

Hardwick and Marshal were on the native in a flash, dragging him away from the veil.

"You speak Earthian," gritted Hardwick, "now we've got one of you. What goes on?"

"He looks like Benton," cut in Marshal.

The native rolled his head helplessly, his voice weak. "I *am* Benton." The voice faded and the eyelids fluttered.

Hardwick gasped. He looked close. It was *true*—it was Benton. A different Benton. Skin bronzed from head to foot. Slightly older, perhaps. Bare feet calloused.

The bronzed Benton licked his dry lips and tried to gather strength. *"Remember Wassel said you had to come get yourself to go to Heaven?"* His voice rattled and the eyes dimmed. "I've been in Heaven—lots of women. Beautiful women and lots of kids—*my* kids. Was going to explain . . . only . . . you—" A long quiver started to run through the body. "Don't go back . . . they—"

Benton was dead.

Hardwick was startled to see Doc Marshal straighten up suddenly. His face was drained of all blood. Silver white. His voice thick, he said, "Let's get back to the ship."

"No," Hardwick was firm. "I'm going in there and see what—"

"It won't do any good," said Marshal dully. "I've got to get back to the ship. I've got to. Then I'll know for sure." He flicked on the warming button to his suit repulsors. "I'm going now. Coming Wassel?"

Hardwick's mind rocked. This was unthinkable! He was in command—or wasn't he? Could Marshal be turning yellow? Anger blazed within him. "I'm going in there."

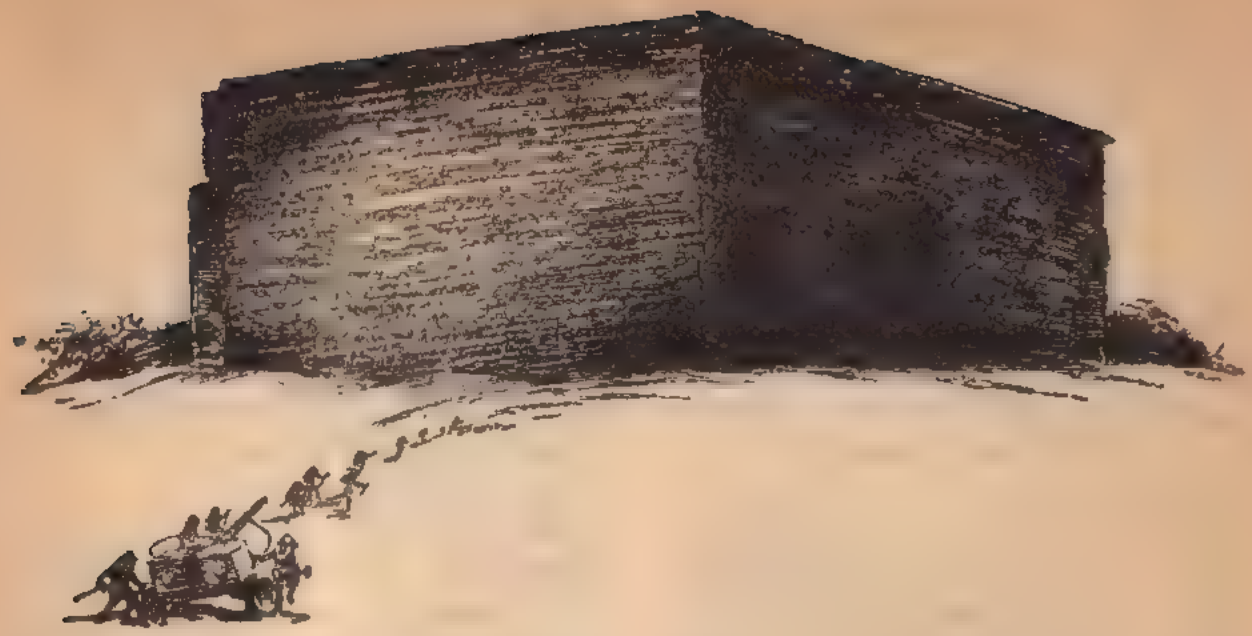
"If you wish," said Marshal tonelessly, "but it won't do any good. I'll know for sure when I get to the ship." He pushed his throttle open and soared swishing up into the night.

Wassel looked at Hardwick keenly. "Should I go with him? Think he needs me?"

"He needs something." Sickened, Hardwick turned away. "The rest of us can handle this." He didn't even look up as he heard Wassel's body whistle up and up in a long looping flight down toward the ship. He felt empty.

Hardwick pulled at his scattered emotions. This was no time for a letdown. "You—Taylor. Hook up to my belt cable and you to Gregor and so on down the line. I'm going in as far as a cable length. If my radio cuts out—don't enter unless I give three tugs. If I pull once—pull me out. Quickly. If you want me to come out, pull twice and then pull me out anyhow. Got it?"

The men moved about their duties quietly, their glowing hand torches and shining battle dress giv-



ing them the appearance of gnomes. Hardwick shook himself. He must get a better grip on his nerves or he would be imagining things. He tried a short laugh. The laugh sounded like a grunt. Or did he need to imagine things? Hadn't enough happened already?"

Slowly, carefully, he approached the black curtain. It drank the beam of his torch. No reflection. He pushed his battle-ax through. Nothing—then his arm. No sensation. Now, tensely, he inched his foot into the blackness. It seemed solid. Now he was almost inside—almost—

Instantly, blackness. Hardwick shivered but began a slow sliding, inching progress deeper into the blackness. His headset was dead. Not even the hiss of static. He mustn't get lost. The thought made him whirl in the direction of the opening behind him. Nothing—panic seized him and he was about to grope for the belt cable when without warning he was jerked viciously from his feet. His mind spun as he felt himself hurtle through space to crash heavily on a hard surface.

Hardwick opened his eyes. He was outside! Sprawling on the ground. Everything was a chaos. Dimly he could see the men firing rapidly in all directions. Firing at something he couldn't see. And didn't understand. His mind snarled inside his skull. The eternal stumbling and fumbling and waiting now seemed ended. Something was happening. He started to run over to where one of the semiportable blasters was spitting intolerable flashes into the dark sky—and stumbled over a body. Automatically he dropped his glare shield to absorb the blinding flashes from the blaster and saw it was the crushed and mangled body of Taylor. The strong cable was snapped from the belt like thread. That tremendous jerk—his temples pounded—had

pulled him out. But what had done *that* to Taylor. A few feet away he saw another body flattened and impressed into the hard soil as if from the blow of a gigantic maul.

Overhead, things swirled and whirled. His straining eyes couldn't quite catch an image in definite focus. The men were drawn together in a tight ring—back to back—their blasters flashing upward in futile seeming blasts. The impressions, the thoughts, the incoming scenes all washed into his mind as a gigantic overwhelming wave. Almost in the same instant, he gave the command to return to the ship, dropped his cable and flicked on his repulsor. He waited until the last man had cleared and then put on full acceleration for the distant ship.

The air sighed at his body armor as Hardwick, every muscle tense, eyes wide, waited for something to happen to him. The wind whistled. Vague things brushed him—or did he imagine it? His knee hurt.

The ship swelled in size as he dropped swiftly. He could see tiny figures tumbling into the open lock. The lighted opening yawned—swallowed him—the lock clanged. He was inside!

"Sit down, Hardwick." The voice was weary. Weary as death.

Hardwick turned.

Doc Marshal faced him. He held a blaster cocked at full aperture.

Stunned, Hardwick stood there.

"Sit down. I don't think outside will bother us now that we are back to where we are supposed to stay like good little boys." Marshal twitched the blaster. "Pardon this thing—but first I must know how all of you will feel about what I have to say. It's not pleasant."

Hardwick hardly heard his words. He had noticed a faint familiar throbbing beneath his feet. Why—that meant the engines were functioning again. That meant they could move once again. He galvanized into action. "The engines . . . we're leaving—"

"HOLD IT!" It was Marshal holding the blaster dead on him. "We're not going anywhere."

The words just skittered across Hardwick's mind for an interval before his brain accepted the unbelievable knowledge his ears brought.

"Not . . . going . . . anywhere?" Hardwick heard himself say the meaningless words and his mind tightened. "Seize him, men. We're getting out of here."

Not a man moved. Their eyes were riveted on the blaster held so steadily.

For the first time Hardwick noticed that Wassel was standing slightly behind and to the right of Marshal. His eyes held an expression that made Hardwick wince. He looked at Doc Marshal and there, too, was a look of hopeless, utter defeat.

Hardwick sat down.

"That's better." Marshal said it almost gently and then his voice shook as he continued. "I'm sorry, Hardwick. I'm sorry to everybody. I'm even sorry for myself." He took a breath and seemed trying to form a sentence. Finally, he man-

aged: "If we are the men I think we are—we are all dead men!"

Hardwick's nerves jumped. He had to deal with this situation psychologically. Doc Marshal, his old friend, must have cracked up. He tried to relax and say in a calm voice: "Now look, Doc, put down that blaster and let's start from the beginning."

Marshal smiled grayly. "There is no beginning now—this is the end." He tightened his grip on the weapon. "So don't think you can talk me into putting this thing down. This is the finish for all of us. I've talked it over with Wassel, told him what I'd analyzed and he agrees. Right, Wassel?"

It was the look on Wassel's face and the utterly hopeless way that he nodded that gave Hardwick his first grave doubt. Wassel's eyes held a message. A dreadful message. What had they discovered to pull the backbone out of men such as they? What had they decided?

Hardwick thought darkly. Let Marshal talk all he wanted to, but the first unwary instant—he—Hardwick, would get that blaster and then he would see. But he must be swift, as Doc was an expert with a blaster.

Marshal went on: "Hardwick, during your brief assumption of Senior Command, it is my opinion you did your best. I'm sure the men feel the same. You were under a tremendous strain. No one could ask a man for more. You did all right."

Hardwick's heart missed three beats. What did Doc mean by saying: *did* and *were? That was as if his command was past tense!* What did Doc mean? "Explain yourself," he burst out. "This is mutiny!"

Doc Marshal shook his head. "It is far more than mere mutiny. But I am putting the responsibility solely on my own head. And my main responsibility is seeing to it that you all either kill yourselves"—he looked around the suddenly hushed circle—"or I'll kill all of you—to a man!"

Hardwick could hear his own mind repeating that astounding message word for word—over and over—like a recording tape. It didn't make sense. The engines were working again—"

Words tumbled out of Wassel. "Don't you see? The rabbits!" His voice shrilled. "Just like the rabbits and guinea pigs in Doc's laboratory."

Doc Marshal's tired voice cut in: "Like my rabbits." He paused as if he had to mentally lift a great weight. Then: "Hardwick, I have a laboratory full of animals back there. I breed them for laboratory purposes. Experiments, toxins, cultures, vitamins. Things we humans breed for our own selfish purposes. I don't keep the male rabbits with the female rabbits. The rabbits don't know who built their pens. Or why. They don't know how food magically appears or from where. They don't know how they are healed. Time to them is surely different from time to us. They don't know how one rabbit is mirac-

ulously transported from one pen to another. It must be rabbit heaven for a healthy male when he is put into a pen full of—"

"STOP IT!" Hardwick was astounded to realize it had been his own voice that had blurted that command. His entire being retreated from the realization that was trying to get a foothold in his brain. He said dully, "All those humanoids out there are nothing more than—" He couldn't finish. "Then why don't we get out of here?"

As if off in a distance he could hear the other men clamoring. Angrily.

Marshal blanketed the noise. "Wait—my original statement was that *if we are the men I think we are—we are all dead men!*" He went on swiftly. "The human race—our civilization could never accept the knowledge we now have. Think what a devastating realization it would be to our civilization to know it was nothing but a race of—wild rabbits that hadn't been discovered. Humans could never face the fact that a race existed so far superior to them that they were nothing but animals used in experiments."

Wassel broke in: "After all, it's not so unthinkable that . . . higher life forms might need . . . higher life forms than rabbits to breed their own cultures necessary to protect themselves against"—he shrugged wearily—"something deadly to them?"

Doc Marshal said, "If you were raising white rabbits and discovered that unaccountably some . . . black rabbits had somehow wandered into the pens . . . what would you do?" He didn't wait for an answer. "At first you would make certain they didn't get away. Then you would remove a few specimens and examine—dissect a few—analyze their food supply—and then what would you do?"

"Try to scare them back to where they came from." Hardwick said it listlessly. "Try to catch the rest of the bunch."

"Exactly," said Marshal. "When we got back to the ship I knew that that was what is expected of us."

"The engines were working again," said Wassel.

Marshal's image faded into focus on Hardwick's spinning brain. The blaster was steady and Marshal went on: "Whatever is out there, found out what it wanted to know. Now it wants us to go back where we came from. Catch the rest of the bunch perhaps—we don't know. We can't hope to explain or beg. It wouldn't even recognize us as thinking creatures to its way of reasoning. Us, our civilization, this ship, is probably kid's stuff. But there is one thing it probably doesn't know and that is man's—our civilization's eternal willingness to"—the voice faltered for an instant, then steadied—"sacrifice everything—life itself, for the preservation of the race. It was inevitable, as our race expanded that sooner or later we would stick our necks out too far. Run into something so utterly far beyond our own development that it couldn't be han-

dled in ordinary ways. This is it. But I think we can handle it."

The engineer cracked immediately like a strip of metal bent too far. His voice babbled and pleaded and cursed. "Let's get out of here."

It began to infect the other men. Hardwick could feel it. He felt strangely distant, but he could feel the growing mob instinct. The wild desire to get away from something it couldn't understand. The room was a bedlam of shouting voices. If Marshal was right—this then was death for all of them. And him. Perhaps Marshal was being too hasty. Overwrought. Perhaps he had missed something. But if Marshal was right, then he was right one thousand percent. They had to die rather than return and take the chance of whatever was out there discovering their unthinkably distant civilization. Hardwick had a smothering sensation. Even a civilization as powerful as this unknown thing that hung over them couldn't hope to find their home planet in the uncounted billions of suns unless they led the way home. Or could it?

Abruptly he found himself thinking that Marshal was right. But no—he must get that blaster and convince Marshal to wait until—he didn't know what. He snapped alert as the engineer roared:

"Why kill ourselves? I ain't gonna kill myself and you ain't gonna kill me! So what do you think of that? I say let's get out of here." His body was tensing visibly.

Marshal's face became a mask of pain as he looked at the engineer. "If the thing sees we don't leave or thinks we are trying to give it the slip, who knows what it could do? Who knows what it could learn from our brain channels if we forced it? If it already hasn't." He swung the blaster. "I'm sorry —believe me." And shot him.

In that instant, Hardwick leaped for the blaster—and in that floating split second, as his body hurtled through the air, he knew he was too late.

He saw Marshal's distended eyes and the flaring mouth of the blaster swing toward him as in a dream. Time seemed to stop and he was suspended in midair. The muzzle flared. Bright.

The intolerable blow smashed him. His mind filled with swirling blackness spotted with spinning flashes of red pain. Dimly he heard Marshal say, "How do the rest of you men want it? It's got to be done."

Then he must have fainted for when he felt himself coming back and up as from a great distance all was quiet except for Marshal saying, "—am sorry about Hardwick. There was no other way."

Hardwick struggled against the weakness. He must let Marshal know. His throat managed to whisper, "Right . . . Doc . . . it's all right—" and then Hardwick felt his mind going over the edge of darkness and he knew Doc Marshal was right. As his mind slipped down and down it thought bitterly —so this is death—blackness. And

the thoughts and consciousness that had been Hardwick glimmered faintly and went out.

Marshal's stooping figure straightened up from Hardwick's lifeless body. He looked at Wassel. "I liked Hardwick." His voice choked. "And now that leaves you and me—"

The figures of the two men suddenly flickered and the walls of the spaceship wavered as a thick milky whiteness swirled around and—

Bloodson's frightened eyes stared at the now fuzzy and jumbled three-dimensional images, and then at the two silent gray-faced men in the pneumatic chairs.

"Marshal," he croaked. "Wassel —you fools. Why did you try . . . how did you two men bring back that entire ship all by—"

"WITHDRAWING!" cut in the alien thought. "ENOUGH. SUGGEST PERMITTING CULTURE TO BREED UNMOLESTED. USELESS FOR OUR PURPOSES. INDIVIDUAL INITIATIVE AND INSTINCT OF RACIAL PRESERVATION TOO HIGHLY DEVELOPED. RETENTION OF KNOWLEDGE OF OUR EXISTENCE FORBIDDEN. SUGGEST DISINFECTING LOCAL AREA. WITHDRAWING."

Terror-stricken, Bloodson watched one of the gray-clad figures collapse like a deflated balloon and the other figure rise from the chair withdrawing a strange looking instrument.

"No—" gasped Bloodson. "No—" And then he sagged in his exquisite chair waiting for he knew not what.

THE END.

IN TIMES TO COME

Or, this month, the "OOOPS—WE'RE SORRY" department. "Renaissance" got plumb away from us; the last installment, supposed to finish up with this issue, turned out to be just a mite large for the compressed-size Astounding to swallow in one gulp. In its fourteen-year history, Astounding's slipped that way just once before. Long time readers are invited to test their memory. "Renaissance" definitely, incontrovertibly, unequivocally and absolutely ends next month.

But Malcolm Jameson has a (complete!) novelette in next month's issue with a nice-sounding, generous-looking offer that's booby-trapped for fair. Venus was open for colonization. Any man could have all the area of the planet that he cared to mark out on a map. The slight hitch being that, eternally fogged over, no surveying methods would work, no map could be drawn, and—it's properly titled "Blind Man's Buff."

THE EDITOR.

Business of Killing

by FRITZ LEIBER, JR.

If you could slip over into other possibility worlds, you might find some strange economic set-ups, some strange enterprises. Take the business of killing for instance—

Illustrated by Orban

The pacifist was looking for a warless world.
He thought he had found one.

The room was small and undistinguishable, yet there was the indelible impression that power radiated to and from it, that it was the focal point of vast, far-flung, tension-fraught, and crucial activities. Its general appearance—that of a hastily-stripped living room—clashed with the large, efficient, and centrally-located desk, from which radiated a number of ribbons sheathing conductors and adhering unobtrusively to the floor. A strong possibility: that it was the temporary headquarters of an organization engaged in a critical enterprise.

The man who had said they might call him Whitlow sat in a corner. His face was long, bony

and big-jawed, but the effect was of fanaticism and obstinacy, even sulkiness, rather than strength. He rubbed his hands in a way that was meant to be amiable, very much the master of the situation although it was he who was being interviewed. His gaze wandered inquisitively. He looked, despite his pseudogeniality, as if he could make his expression go all stern in a moment, and he wore high-mindedness like an admiral's uniform. Yet behind it all lurked a hint of the brat who knows where the candy is hidden and who knows, furthermore, that he is immune from interference.

Saturnly and Neddar sat behind the desk. Or rather Saturnly sat behind most of it, while Neddar was tucked in at a corner, his nimble fingers poised above the noiseless keys of a hidden lightwriter, which was at present hooked up with a little panel that stared slantwise at Saturnly from the center of the desk.

Saturnly was obviously all appetite and will power. Heavy-jowled bullet-head set on a torso that had expanded with its owner's enterprises. Eyes in which there was little subtlety, but worlds of dogged power. A man who lived to outshout, outpound, outorganize, and outwit. A great driving voraciousness, joyously dedicated to the task of making men and money work.

Yet deep underneath was the suggestion of an iron and admirable integrity—that in a pinch the man would unfailingly stand up for the things he believed in and lived by, whatever the cost and no matter how tawdry they might be.

Neddar just as obviously had no appetite at all except for his own peculiar whims, and subtlety fairly danced a jig in his liquid brown eyes. Yet he was Saturnly's equal in energy and tireless competence, but based on intellectual rather than emotional drives. A small lithe man, very quick in all ways, young, but with a full black beard. Lips brimming with humor and mockery, though now carefully composed. A human catalyst, a court jester turned private secretary, a super-assistant.

Their relationship was that of crocodile and crocodile bird, or—more accurately—shark and pilot fish.

The most arresting difference between them and the Whitlow person related to clothing. Although superficially similar, there was the suggestion of different epochs of fashion—or some even wider gulf.

They watched him as a fat tom and a brainy kitten watch a mouse just out of reach.

Whitlow said, "I repeat, the means whereby I came here are immaterial to our discussion. Suffice it to say that alternate timestreams exist, resulting from timebifurcations in the not-too-distant past, and that I possess the means of traveling between them."

Saturnly extended his great paws soothingly. He said, "Now, now, Mr. Whitlow, don't excite your—"

He choked off. Neddar's fingers flickered although no other part of his anatomy moved, and there glowed up at Saturnly the follow-

ing warning: "WATCH YOUR STEP! It's probably true. Remember, he turned up where he couldn't have."

Neddar said, "Mr. Saturnly is concerned that you don't overtax yourself after your strenuous ordeal."

Mollified, Whitlow continued in his unpleasantly high-pitched and mincing voice, "I am, among other things, a pacifist. I am visiting the alternate worlds in search of one that has learned how to do away with the horrid scourge of war, in order to bring back the precious knowledge to my erring co-timers. I see in yours no uniforms, no headlines detailing carnage, no posters blaring propaganda, nor any of the subtler indications that war is just over or will soon break out. I assume, therefore, that you have been able to eliminate this dreadful business of killing—"

During this speech a stifled inward churning had been apparent in Saturnly. Now he exploded, "Just who do you think you are, anyway? Coming here and insulting me—John Saturnly—this way! Why, you dirty Red—"

He furiously chewed air. A new message glowed on the panel: "You big ape! This guy's got something. If we offend him, we may not get it."

To Whitlow, Neddar said, "Mr. Saturnly misunderstood you. He is a businessman and has a very keen sense of the dignity and worth of his work. He thought you were referring specifically to business whereas, of course, you were only using the words in a figurative sense."

At the same time he made furtive motions indicating that Saturnly, though well-intentioned, was rather slow of understanding.

Whitlow inquired, "Just what is the nature of Mr. Saturnly's business?"

A grumble of explosions shook the night.

"Blasting operations," said Neddar. "I don't mean his business—that comprises a variety of enterprises and has many ramifications. It happens, moreover, to be very closely concerned with that matter on which you are desirous of obtaining information."

"I'm glad to hear that," said Whitlow. "I appreciate the attention you've shown in bringing me here. But I could just as well follow my usual procedure of drifting around and taking things in gradually."

"A needless waste of your time, which I am sure must be valuable. In Mr. Saturnly you have found the fountainhead. It is his enterprises which have eliminated from this world the terrible and chaotic socio-political upheavals of war."

The explosions continued. There came the vindictive drone of high-speed aircraft. Eagerness and doubt fought in Whitlow's face.

"The night freight," said Neddar. "We are a very industrious people—very businesslike in all matters. And that leads me to another consideration. Mr. Saturnly and I are in a position to provide

you with information which you greatly desire. You on the other hand possess a very fascinating power—that of passing between time-streams."

"Follow my lead," glowed on the panel, but it was unnecessary. Saturnly understood things like this without thinking.

He said, "Yes, how about a little deal, Mr. Whitlow? We tell you how to prevent . . . uh . . . war. You tell us how to cross time."

Whitlow rolled the idea on his tongue, as if it were a new but not necessarily unpleasant kind of cough syrup. "An interesting proposal. I could, of course, ultimately obtain the same information independently—"

"But not so adequately," said Neddar quickly, his eyes flashing, "And not soon enough. I take it that there is some particular war which you desire to stop or prevent." A tiny green light began to blink on Saturnly's desk. Neddar thumbed a square marked "No." It continued to blink. He thumbed the square once more, then resumed, "So speed must be your paramount consideration, Mr. Whitlow."

"Yes . . . ah . . . perhaps. And if I decide to impart my power to you, I would require assurances that it be used only for the most high-minded purposes."

"Absolutely," said Saturnly, bringing down his palm as if it were a seal and his desk the document.

A door flicked open and a blond young lady catapulted in. She squealed, "I know you're in conference, J. S., but this is a crisis!"

Saturnly made frantic gestures of warning. Neddar, after one appraising glance, wasted no time in such maneuvers.

She struck the pose of one announcing catastrophe. "There's been a strike of front-line operatives!" she managed to wail—then Neddar was rushing her out. The slamming door punctuated her woeful "And just when you'd come down to supervise the big push, J. S.!"

"A lovely girl, Mr. Whitlow, but hysterical," said Saturnly. "She talks . . . what's that word? . . . figuratively."

His blandness was lost on Whitlow. "Just what is the nature of your business, Mr. Saturnly?" The voice had acquired an inquisitorial edge.

Saturnly groped for a reply, looking around for Neddar as a dripping man looks for a towel.

"Of course," Whitlow continued, a puzzled note creeping in, "I assumed that there was no war here, because of the absence of war atmosphere, to which I am very sensitive. But—"

"You took the words out of my mouth," said Saturnly, clutching at the straw. "No war atmosphere—no war. You proved it yourself."

But another door flicked open, and it is doubtful if even Neddar could have stemmed the agitated tide of the small crowd that poured through it.

Of individuals of major importance—the rest wore badges—there seemed to be three. The first was tall and had been, at some prior date, dapper and competent.

He said, "I'm through, J. S. I can't do anything with them. They've gotten beyond reason." He threw himself down in a chair.

The second was short and bristling. He said, "Just let me turn the artillery on them, J. S., and I'll blast them out of their sit-down!"

"You and who else?" inquired the third, who was of medium height, lumpy, and wearing a dirty raincoat. "Just try that and you'll see the biggest sympathetic walk-out you ever tried to toss tear gas at."

They disregarded Saturnly's herculean efforts to shush them as completely as they did the presence of Whitlow.

"J. S., their demands are impossible!" The second man barked over the babbling.

The third man planted himself in front of Saturnly's desk. He stated, "Twenty cents more an hour and time-and-a-half in the mud, with pay retroactive to day before yesterday's rainstorm."

"It isn't mud!" the second man rebutted fiercely. "It isn't sufficiently gelatinous. I've had it analyzed."

Two studious-looking men in the background bobbed their heads in affirmation.

The third man dug his hand in his raincoat pocket, stepped forward, and slapped down a black, gooey handful in the middle of Saturnly's desk.

"No mud, eh?" he said, watching it ooze. "What do you say, Saturnly?"

The first man shuddered and cringed in his chair.

With a sweep of his bearlike arm Saturnly sent the mud splattering off his desk as he came around it.

"You dirty gutter-stooge!" he roared. "So two dollars an hour isn't good enough for your good-for-nothing front-liners?" He waved his muddied fist.

The third man stood his ground. He said, "*And* there are complaints about the absence of adequate safety engineering."

"Safety engineering!" Saturnly blew up. "Why, when *I* was a front-line operative—and I knew the business, I can tell you, because I worked up to it from a low-down factory job—we kicked out any safety engineers that had the nerve to come sniffing around our trenches!"

"Care to join the union at this late date?" asked the third man imperturbably.

Neddar's return coincided with the outburst of fresh pandemonium. He gave one apprehensive look. Three skipping strides carried him to Whitlow and put his bearded mouth two inches from the pacifist's ear.

"We did deceive you," he said rapidly, "but it was only to avoid giving you an even more false impression. Let me clear out this rabble. Don't come to a decision until we've talked to you."

Without waiting for a reply, he darted to Saturnly and drew him toward the door, pulling the rest of the crowd after him like planets after a sun.

Fifteen minutes later Neddar was still trying to pry Saturnly away. The second and third man had departed with their satellites, but Saturnly was hanging onto the first man and giving him certain instructions, which caused him to lose his defeated look and finally hurry off excitedly.

Neddar redoubled his tugging. Saturnly did not at once yield to it. He turned his head. His broad face wore a beamy, glazed smile. "Wait a minute, Neddy," he said. "I see it all now. Of course when you first brought the guy in and tipped me off about time-streams, I got the idea they were something we should go for. But you know how it is with me—I can only think when there's no opportunity to. It was only when those boobs came in and started to yammer at me, that I really began to see the possibilities."

"Yes, yes," said Neddar. "And while you gloat, he slips through our fingers. Come on."

But in his exultation Saturnly was imperturbable. "Just think, Neddy, worlds like ours—maybe dozens of them—and we got a monopoly on the trade. A real open-door policy—nobody but us can open it. We got a surplus—we know where to unload it. There's a scarcity—we know where we can get some. We got critical materials by the tail. We set up secret branch offices— Oh, Neddy!"

Only then did he allow himself to be led off.

They passed through three rooms. All had the stripped look of Saturnly's office, yet there was still not enough space for the new installations and occupants. A battery of nimble-fingered girls tended transmitters of some sort. Others typed and lightwrote. Wall-maps glowed vital information. Table-maps had chess played on them by delicate logistic machines. Rakish young men in windbreakers lounged against the walls. Occasionally one of them would snatch up a packet and dart out into the night.

Various individuals, badgeless and badged, assailed and importuned Saturnly.

"Sign this, J. S.!"

"Those front-liners won't let us bring up reinforcements, J. S. They're picketing the communication trenches!"

"J. S., the aircrafters' brotherhood has offered to take disciplinary measures against the front-liners. Can I give them the go ahead?"

But Neddar did not look to either side, and Saturnly's tranced, Bhudda-like smile said nothing.

Only when they came to the blond secretary's desk, beside the door with the motto over it, did Neddar pause grudgingly.

"If there are any important calls, you might as well let them come through," he said bitterly. "There's no longer any use in trying to keep our visitor in the dark."

She favored him with a poisonous smile.

"We're all set then?" he asked Saturnly. "We admit everything and try to sell him on it?"

"We sell him," Saturnly echoed positively.

Neddar hesitated. "There's only one thing worries me," he said darkly. "Your unfortunate tendency to tell the truth in crises."

"Ha—a liar like me!" Saturnly laughed, but a shadow of uneasiness flickered across his face.

Mr. Whitlow had obviously used the fifteen minutes for thinking. Lingering puzzlement and cold anger were the apparent results. The latter predominated.

"I'm sorry, gentlemen," he said, "but there's no longer any possibility of an understanding between us. Your world is a war world like all the rest, except that it masks it in a peculiarly repellent fashion."

"That ain't war," said Saturnly gayly. His exuberance in situations like this perpetually amazed Neddar. "Sit down, Mr. Whitlow. That's just Coldefinc conducting its legitimate business enterprises."

"Coldefinc?"

"Sure. Columbian Defense, Inc."

"Don't think to deceive me by any such ridiculous rigmarole," said Whitlow venomously. "It's obvious that, whatever you call yourself, you've seized supreme political power in your country."

"Mr. Whitlow, you make me angry," said Saturnly genially. "I'm sorry, but you do. I'm a respectable business man."

"But you conduct wars. Only governments can maintain an army and navy."

"That's right," said Saturnly genially. "Come to think of it, they *did* maintain an army and navy—until we bought 'em up."

"But it's impossible!" Whitlow was beginning to argue. "In all worlds I have visited, it is the governments and the governments alone that conduct wars."

"You amaze me," Neddar interjected. "Government is the older form of social organization, business the newer. According to all natural expectations, the newer form should gradually absorb all or most of the activities of the older form."

"Primitive," Saturnly confirmed.

"But don't you have any government at all?" Whitlow demanded.

"Sure," said Saturnly. "Only it doesn't do anything except make things legal."

"An empty sham!" said Whitlow. "How without armed forces, can government enforce the laws it makes?"

"By prestige alone," Neddar answered. "There was a time when religion clubbed people into becoming converts. When the center of social organization shifted elsewhere, religion had to change its methods—rather to its advantage, I believe."

"Moreover," he added gravely, "I thought you were an enemy of exercise of force by government, as in war."

Whitlow sat back. For a moment he had nothing to say.

"Government incorporates us, we do the rest," Saturnly concluded. "The point is, Mr. Whitlow, as I've been trying to tell you, that Coldefinc is a legitimate business enterprise, working hard every minute to satisfy its customers, to make money for its stockholders, and to pay its ungrateful employees a lot higher wages than they deserve."

"Customers?" Whitlow mumbled. "Stock—?"

"Sure, customers. We sell 'em defense. That's how we got started. Government was slipping. Crime was on the up. There were lots of disorders. There had just been a big, inconclusive war and everybody was dissatisfied. They didn't want any army or navy but they did want protection. O. K., we sold it to 'em."

"*NOW* I understand!" Whitlow interjected, a whiplash quality in his voice, his eyes burning. "We had it in our world. You're just the same thing, grown to monstrous proportions. Racketeers!"

"Mr. Whitlow!" Saturnly was on his feet. Neddar lightwrote, "Watch yourself!" but Saturnly didn't even see it. "You *will* make me mad. Every step of the way Coldefinc has conformed to law. Should I read you the Supreme Court decision that because it's any man's right to carry arms, it's all right for him to hire somebody to do it for him? Why, we're so clean we haven't done any strike-breaking—at least for outsiders. How can anything be a racket if it's completely legal?"

Neddar lightwrote, "Excuse me. I thought you were going to say something else. That was perfect."

Saturnly sat down. "To continue where I left off at. We sold 'em defense. First private individuals and other businesses, especially those with racketeers—we had 'em here too, Mr. Whitlow—on their necks. Then small communities that were tired of police departments that did nothing but graft. We advertised—dignified. We expanded—and so we could sell our product cheaper. Then came a war scare."

To give him a breather, Neddar chipped in with, "Meanwhile, similar developments were taking place in all fields of social activity. Forelinc—Foreign Relations, Inc.—absorbed all but the purely formal activities of the diplomatic service. Social Service companies vied as to which could sell its customers the cheapest and happiest ways of life."

"Then came a war scare," Saturnly resumed determinedly. "People howled for our product. Our stocks boomed. We increased our plant—for years we'd been hiring away the best army and navy officers; now we bought the entire personnel and equipment from the government dirt cheap and used what we could of it. We started a monster sales campaign—this time to include neighboring countries. We—"

Whitlow nervously waved for time to ask a question. His face was a study in confusions and uncertainties.

"Do I understand you right," he

faltered incredulously. "You've really organized war—"

"Defense."

"—on a business basis? You sell it like any other product? You issue stock which fluctuates in value according to the failure or success of your activities?"

"Correct, Mr. Whitlow. That's why you didn't see any war headlines. It's all on the financial page."

"And you don't draft soldiers—"

"Operatives."

"—but hire them just like any other business?"

"Absolutely. Though a front-liner usually has to work his way up through other jobs. First in a munitions factory, so he learns all about our weapons. Next transport and distribution so he gets that end of it. Then maybe he gets a chance at a front-line job and the big money."

"You mean to say you pay your front-line soldiers—"

"Operatives."

"—more than anyone else?"

"Naturally."

"But that's detestable," said Whitlow righteously, as if seizing on any opportunity to maintain resentment. "In my world there are soldiers, but at least we don't try to gild the dungheap by paying them high wages."

"What?" Saturnly asked. "You mean in your world an operative doesn't get as much as a factory hand? Or doesn't anyone make any money."

"No," Whitlow replied angrily, "a factory worker is well paid. We have wage scales governing such things."

"But that's terrible," said Saturnly. He seemed shocked. "A front-liner has to have all kinds of

skills, and besides it's dangerous work, as dangerous as mining—maybe more—maybe almost as risky as deep-sea diving."

Whitlow wilted. He looked dazed. "Then those men that rushed in here a while back—they really were talking about a strike by front-line operatives?"

"Sure."

"But how can you allow such a thing? Surely it will enable the enemy—" Whitlow looked up, his eyes widening. "Who is your enemy?"

"Right now it is the Fatherland Cartel," Saturnly replied breezily. "You needn't worry, Mr. Whitlow—it's just a little sit-down strike the boys are having. They'll hold the line if they have to. The only bad thing is that it'll slow up the big push—for a while," he added cryptically.

"Then you're actually engaged in fighting a war—a real war? It's business—but at the same time it's war?"

"Of course, Mr. Whitlow," Saturnly replied patiently. "We try to defend our customers without fighting, but if we have to, we fight. Coldefinc always delivers."

"And that war is like any other war? Battles, invasions, encirclement and annihilation of the enemy army?"

"Liquidation of his plant," Saturnly corrected. "Though of course we're all business men and try to avoid useless waste." He airily waved a hand. "Oh, yes, those things happen, but they aren't the really important part of the war. The important part is the underlying financial situation."

"Yes?" A sudden, new interest lighted Whitlow's eyes. Neddar noted it and his tense watchfulness was broken so far as his fingers were concerned. He lightwrote, "Concentrate on this angle. You're going great. Just don't get excited."

Saturnly leaned forward, beaming. "Mr. Whitlow, I know I can trust you. You're not of this world, and what's happening in it doesn't mean anything to you." He paused. "Mr. Whitlow, it's a dead secret, but in a few days Coldefinc will have the Fatherland Cartel by the tail. Through disguised holding companies in neutral countries we've been buying up stock in the component organizations of the Cartel. The big push is mainly to scare a few people into letting go their shares. Pretty soon we'll have more than fifty percent, and then, Mr. Whitlow, this war will be over like that." He snapped his fingers.

Whitlow goggled. "You mean all you have to do is to get a controlling interest in the enemy organization?"

"Sure."

"And the enemy will submit to it?"

"What else can they do? Business is business."

"And you won't have to invade or annihilate them? Untold killing and destruction will be avoided? You won't lose many of your operatives?"

Saturnly shrugged. "Not more than in normal times."

"Mr. Saturnly!" Whitlow stood up. The new interest had grown to a consuming, fanatic flame. "I have a proposal to make to *you*. Could you do that sort of thing for my world?" He held out his hand as if he were giving it to Saturnly.

"Um-m-m." Saturnly leaned back frowning. Neddar rejoiced at the way he masked his triumph with an air of reluctance. "I'd have to think it over. It's a big proposition, Mr. Whitlow."

"I'd provide the means of entry," the pacifist continued rapidly. "You could bring across whatever you'd need in the way of operatives and . . . er . . . plant."

"I dunno," said Saturnly dubiously. "Is there any business at all in your world, or does government run everything? If there isn't, it'll be pretty hard for us to get an in."

"Oh, there's business all right," Whitlow reassured him. "Though at present somewhat submerged."

"And are there any neutral countries? Or are they all in the war?"

"There are still a few neutrals."

Saturnly thought. Whitlow hung on his reactions.

"Well, we'd have to go slow at first," Saturnly finally said ruminatively. "There'd be the matter of sales research, sizing up likely prospects, setting up pioneer offices and also incorporating firms to front for us—that's where the neutral countries would come in handy." He began to warm up. "Then we build up plant and personnel—the latter mixed, from both worlds. Then feeler compaigns, trial balloons, preliminary advertising and promotion. With all that set, we really start in." He turned to Whitlow. "Of course if we get that far, there's no doubt of our ultimate success, because we'll be all business and they'll be just maybe half business and half government—an awful jumble."

Whitlow nodded eagerly. Neddar lightwrote: "You've got him, J. S.!"

Saturnly laid his hand authoritatively on the table. "First we sell the neutral countries—they'll want protection the worst way, because they won't know which side is going to jump them first. At the same time we start hiring out to do small jobs for the warring nations—we pose as kind of war-industrial specialists. Maybe the neutral countries get invaded and we have a chance to show our stuff. Maybe the small jobs grow into big ones. Maybe both." He was really warmed up now. "Either way our stocks boom. We put in more plant, increase personnel, start a major sales campaign. People begin to have more confidence in us than their government armies. We pick one of the big powers—whichever is slipping, it doesn't matter which—and buy it out. The other side—we outorganize 'em, outbuy 'em, hit 'em hard on both the financial and operational fronts. And then—"

The phone purred. Automatically Saturnly snatched it up and bawled into it, "Yes?" A wait,

while Whitlow swayed forward in pale-faced, hypnotized eagerness. Then in a roar, "What do you mean bothering me with trifles like the strike being called off when I'm fixed with something important?" Suddenly a wicked smile fattened his face. "Oh, it's you, Dulger? You don't like me sending whiskey to those front-liners? Well, what would you want if you were out there in all that mud?" From beyond the walls, making them tremble faintly, came suddenly a many-voiced rumbling. It kept on. "Hear that, Dulger? It's the big push. Oh you're going to indite me for corrupting my workers? Good. Good! Maybe some day when you start a real man he-man's union, I'll join it."

He turned back. His lips formed, "And then—"

But there had been time for his previous words to ferment in Whitlow's emotion-drunk soul. The pacifist's face was a mask of fanatic ecstasy and his voice was hoarsely vibrant against the grumbling guns, as he finished for him: "And then, Mr. Saturnly, will come the millennium to which the nobler side of mankind has always aspired, that utopia of perfect and gentle brotherhood which your world will so soon attain and which you will ultimately bring to mine, that purified existence from which all hatred and strife, all greed and war, have been forever banished. I refer, Mr. Saturnly, to that most precious of all blessings—peace."

"WHAT!" Slowly Saturnly came to his feet, crouching bear-like. Slowly his bulging neck suffused with red, with purple. In vain Neddar plucked, tugged, jerked, at his sleeve, desperately lightwrote, "Don't J. S. Don't! DON'T!", resorted to even more drastic efforts to shut him up. He might as well have tried to quiet a god. In the rapidly shifting excitement, the truth-telling mechanism buried deep in Saturnly had been set in motion, and now could no more be stopped than if Saturnly had been Juggernaut's car.

"You . . . you talk to John Saturnly of PEACE when you know War is his business?" He loomed over the astounded pacifist like a prehistoric idol. His voice boomed from the walls. "You'd have me wreck a world-organization that I built up with these hands? You'd have me throw my customers to the dogs? Bankrupt my stockholders? Fire millions of loyal employees out into a world where they would drift around unemployed and help start a real mess? No, Mr. Whitlow, I'll gladly help you with your proposition, but you must understand that if Coldefinc tackles your world, it will be war from then on—forever!" He sucked up a great breath and drew himself erect. "Maybe, Mr. Whitlow, you didn't read the motto over the door when you came in. 'When there are bigger wars, Coldefinc will wage them!'"

The pacifist shrank back in horror, shock and fear.

"I . . . you—" he mumbled brokenly. Then it all came out in a whimpering rush. "I won't have

anything to do with you, you fiend!"

"Oh yes you will!" Saturnly came around the table, crouching. "You're going to show us how to cross time." He kept coming. The pacifist was wedged in a corner and fumbling with his coat. "We've been nice to you, Mr. Whitlow, but now that's over. I don't like people who try to go back on me." Whitlow's hands came out with what looked like a small gray egg. He fingered it in a panicky rhythm, and his face went blank as if he were desperately trying to concentrate on some thought. Saturnly closed in. "We're going to have your secret, Mr. Whitlow, whether you get anything for it or not." Then suddenly, "Stop him, Neddar! Stop him! That way! No, that way!"

Both men dove. Saturnly with a bearlike lunge, Neddar with an incredibly pantherlike leap. They clutched air, scrambled up, looked around. Mr. Whitlow was gone.

For a long while nothing was said or done. Then, slowly, heavily, Saturnly walked back to the desk and sat down and pressed his face in his hands.

"He faded," said Neddar in a voice that faded likewise. "He got misty and went curving off . . at an increasing tangent . . toward an alternate future—"

Then his rapierlike anger flashed out. His eyes seemed to spark and his black beard to crackle with the electricity of it. He whirled on Saturnly.

"You big honest imbecile! How you ever got this far, even with me to do your conniving for you, I don't know. You had him sold. We had worlds within our grasp, worlds ripe for exploitation and conquest, worlds for sale at bargain prices, and you had to go sincere and scare him off—forever. Oh you bumbling ape!"

"I know." Saturnly pressed his face harder. Neddar twisted his features in one last bitter grimace, then tossed it off, sighed and almost smiled.

Saturnly peeped at him guiltily between thick fingers.

"You know, Neddy," he said softly, "Maybe in a way it's just as well this didn't go any further. You know how I think—always while I'm doing something else. Well, while I was selling this guy, I was thinking of something very different. You know Neddy, our world is maybe kind of peculiar. We rate business and money and financial things above everything. They're our ultimates. If something's decided in a business way, it never occurs to us to try to go around it or look for any other answer. Maybe it isn't that way in the other worlds. I know it's hard to imagine but maybe they wouldn't think of business as the ultimate. Maybe the people in those other worlds are sort of different . . . sort of crazy—" His voice changed, took on a note almost of relief, as he finished, "At least, if they're anything like that Whitlow guy!"

THE END.

It wasn't their idea, but they stumbled on the perfect ambassador to the Martians. He had a way of thinking and acting that Martians understood—

Hobo God

by MALCOLM JAMESON

Illustrated by Williams

1. The boss is BOSS.
2. No killin' in the tribe.
3. No winmen stealin'.
4. Wimmĕn do winmen's work.
5. Men do men's work.

—*The Five Laws of Turm.*

They were both convicts. Atkins, naturally, was in charge. He was the smart one. The other was sent along on the theory that *if* the Freihofer experiment was successful, a man of brawn might be needed at the other end. So Bummy Thurmon's sentence was commuted, too. Not that it mattered much to him. So long as there was food aplenty and opportunity for unlimited sleep, anything was all right by him.

Yes, Atkins was smart. Perhaps a shade too smart. For he was the third ranking scientist in a world where scientists were top dog. But it was his misfortune to be inordinately vain and ambitious, and he wanted to be first, not second or third. That was why he attempted to steal the Hammond formula, and that is how he came

to kill a guard. Either offense would have spelled ruin; taken conjointly they added up to a sentence of death. Even Atkins, powerful as he was, could not escape the usual choice—the lethal chamber now, or twenty Lunar. But it was at just that point that the Freihofer rocket was adjudged ready to ride, and Atkins, being a proper scientist, barring such offenses as theft and murder, was the logical man to go.

He accepted, of course. It was death, any way one looked at it, but not so swift and humiliating as in the chamber, or yet so long and agonizing as that on the Moon. And there was the outside chance that he might even survive awhile. In exchange he was required only to promise to keep a faithful log of the pioneer voyage and try to parachute it safely to the surface of Mars.

Thurmon had less choice in the matter. His going along was the result of the arbitrary whim of a judge. Thurmon's crime, if crime it was, was more diffuse. He was, to put it plainly, a tramp—an atavism in a world where efficiency was god. In his infancy someone had erred, or he would never have emerged from the creche. Yet there he was, congenitally stupid and allergic to work in any form. In a highly integrated society there was simply no place for him, as one harried magistrate after another found out. Their only recourse was to an ancient statute defining the misdemeanor of vagrancy, and that had been invoked just one hundred times before he came face to face with the last judge of the series. That one happened to be an adept at casuistry.

"Thurmon," he said, "I am going to give you one more chance. How would you like to sign on on a ship where you won't have anything to do but eat and drink and sleep?"

"That's O. K. with me, chief," mumbled Thurmon, "so long as there ain't goin' to be no rocks to pound."

That is the way the two ill-assorted members of the *Heavenly Messenger's* crew were chosen, and also explains why it was that as the projectile swept in on an ever tightening spiral into the thin atmosphere of Mars, one was at the observation port, tense and alert, and the other snoring blissfully in his bunk.

"We're going to make it!" whispered Atkins to himself, excitedly checking the trajectory for the ten thousandth time. Then he computed swiftly the rate of fall. It was much too fast, as he had feared it would be despite his efforts at atmospheric braking. There was only one thing to do, and that quickly.

"Up, you lug!" he yelled to the slumbering Thurmon, "and get on your chute. We're going to jump."

"Huh?" grunted the hobo, cocking one bleary eye. But Atkins was hustling about the chamber, grabbing up last minute items. There was a large packet already packed and chuted awaiting release in a special compartment aft that contained all the essentials for a long

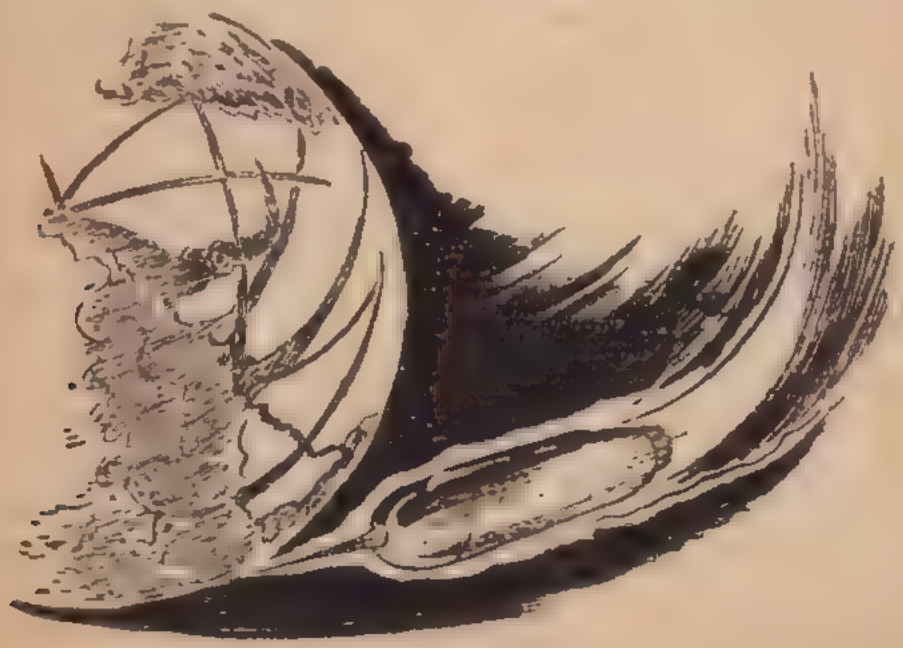
stay in the desert. But Atkins was too forehanded to rely altogether on that. It was best to have a few things on his person. So he snatched up the only gun and buckled it onto his belt. To that he added the one remaining flashlight with a live battery, a few tins of sardines, and a canteen of water. Those, added to the ample supply of compressed food pellets carried by both men, would be sufficient to give him the edge he felt he needed. For Atkins was a mere shrimp of a man while the clumsy Thurmon was on the gigantic side. Who knew how he would behave once the pinch of desert thirst assailed him?

"Jump, you bum!" ordered Atkins, flourishing the gun.

"O. K., O. K.," growled the still sleepy Thurmon. Obeying orders was a habit with him. He never reasoned about it or questioned authority. Atkins' push helped, too. A moment later Thurmon was on his way to the sandy waste beneath, and a split second after that Atkins was following.

The fall was assuringly slow—slow enough for them to see the end of the rocket. It crashed against a dull brown stony escarpment some three miles away, still trailing the fouled parachute that was to bear the emergency supplies to the ground. The impact was terrific. There was a blinding blast of varicolored fire, a moment of hurtling incandescent vapors, and then all that remained was a puddle of glowing slag drooling slowly down the cliff.

Atkins saw it and cursed, but was thankful for his foresight in snatching up the gun. If things on the surface were not promising, he would add Thurmon's pellet store to his own. Thurmon, as he saw it, was no loss in any man's language, on trackless Mars as little as at home. But the sands were rising up to meet him, and he tugged to maneuver for an easy landing, not



far from where Thurmon was already down. Atkins had already had a fairly comprehensive view of the terrain. It was exactly as imaginative writers had often pictured it—a planet of drifting reddish dunes on the plains between the high escarpment to the west and the ribbonlike lagoon stretching poleward on the east. The only hint of life was the broad green band that bordered the glistening canal. That meant vegetable life, surely. Perhaps there were also animals.

The place they made their landfall was about halfway to the water. Some three miles one way the escarpment shimmered in the heat, its face pocked by a myriad of caves. In the other direction lay grass and shrubs and water, and halfway in the sky above it hung the rising sun—a midget, pallid orb compared to the fiery one on Earth.

"It'll be bitter cold tonight," said Atkins, as Thurmon shambled up, "and we'll probably have to hole up in one of those caves. Meantime let's go over to the canal and see what grows here."

"O. K.," grunted Thurmon. The place he was was no good at all. Just sand studded with small sharp boulders. Not a fit place to finish his nap, and nothing to eat in sight. Without protest he shuffled along behind the dapper ex-scientist, only grumbling as the hot sands burned his feet.

About a mile farther on Atkins stopped to stare at a trail that crossed their own. It came from the southwest and consisted of numerous quasi-human footprints, all headed canalward. Atkins noted the long toes and the blurred places between their traces indicating hair. The great toe was like a thumb, as well, and probably was opposable.

"There are monkey creatures here," he said to the blinking Thurmon. "That is strange."

"Uh huh," commented his brutish companion. Thurmon was literally a lowbrow. The thick thatch of his bullet head encroached his forehead almost to his beetling eyebrows. Below that his puffy eyes and jutting jaw surmounted a generously built, barrel-chested body.

"Your kind," Atkins wanted to add, scowling at the gorillalike figure. But there were too many uncertainties to provoke a showdown yet. Instead he added, "I hope they're edible."

"Uh huh," agreed Thurmon, cheering appreciably. He detested pellets and dehydrated food. Never again would he fall for a judge's smooth promise.

They resumed the trek. A mile beyond they came upon something that at first appeared to be the ruins of an ancient temple. On closer inspection it turned out to be a group of petrified tree trunks, still standing. Peeping out of some of the many hummocks of sand about were the butts of other fallen ones.

"Ah, so there were once trees here," observed Atkins. "That accounts for the evolution of anthropoid types. Since they survive, we can, too." And as he continued on

toward the green he fell to thinking on probabilities. At worst the monkey people could be hunted for food. If they had intelligence, so much the better. It would be no trick at all for a super being such as Atkins to gain mastery over them. He made a face at the thought of being king of a tribe of simians, but consoled himself with the recollection of what it was said to be like on Luna.

A moment later he discovered there were other animals on Mars. On the first short grass they came to there were small horselike creatures grazing, but they fled the moment they got the scent. There were rabbits of a sort that jumped up and loped away, and, in the distance a beast that resembled a pig. And then, as the grasses grew higher and coarser, they sighted their first Martians.

They were distinctly humanoid. They were tall, lanky, starved looking caricatures of men, with gaunt ribs and distended bellies, but they were no hairier than many breeds of men. Vestigial tails of some four inches in length were all that marked their recent apish extraction. The group first seen were too intent on what they were doing to notice the arrival of the outplanet strangers. They were formed in a tight circle, facing inward, yelling and jabbering excitedly. Then there was an anguished wail as their ranks broke. The object of their hunt had eluded them. A brownish animal leaped through a gap and went bounding away—a huge rabbit.

"Don't boss, you'll scare 'em," shouted Thurmon, but too late. Atkins already had the pistol out and was aiming it. Thurmon realized, as Atkins had, that the monkeymen had seen them and were standing in frozen wonder. But Thurmon's antecedents were different. Having had to live by his wits as a chronic panhandler he had developed an uncanny ability to gauge people's attitudes. Call it a sixth sense, telepathy, intuition or just plain hunch—whatever it was Thurmon had it to the *n*th degree. Those Martians were friendly, simple men—but simple. The proper approach was to amble up with a wide smile. Then ease in for the touch—oh, ever so little at a time. Rush 'em, and they'd hightail it for the hills.

That was exactly what happened. Atkins' shot was a marvel for accuracy. It was the fleeing rabbit that was his target, and he hit it fair. The animal turned one despairing flipflop in the air and lay dead. Then Atkins ran to it to retrieve it and hold it aloft for the Martians to admire. His intention was to present it to them as evidence of his superior prowess as a hunter, but by the time he turned to receive their grateful kowtows, there were no monkeymen there. They had scattered in all directions, squealing hideously.

Thurmon shook his head. They'd never get anywhere that way. Atkins was too direct.

If Atkins was disappointed, he did not show it. He laid the carcass beside the trail and led on toward the water. It would serve

for their own dinner later. Meantime he stopped from time to time to examine the vegetation and the soil. Here was rich loam, and it supported a great variety of plants, indicating clearly that Mars was not too long before a comfortably habitable planet. There were clumps of grain very much like wheat, and farther on stalks of stunted corn. Gnawed cobs and scattered shucks told the story. The band of Martians ahead had been foraging. Apparently they emerged from the caves in the daytime to hunt their food along the canal.

It was midafternoon before they came upon the main body. The trail veered northward alongside the canal, and from the trampled state of the grass Atkins deduced that the thousands of monkeymen had traversed it like a swarm of locusts, nibbling at every head of grain that was already ripe. Where they had been nothing edible was left. The tribe was evidently as ravenous as it looked. Probably the two Earthmen would have overtaken the Martians much earlier than they did except for the fact that the easygoing Thurmon went on a sort of strike.

"Doggone it," he grumbled, "my feet won't stand no more."

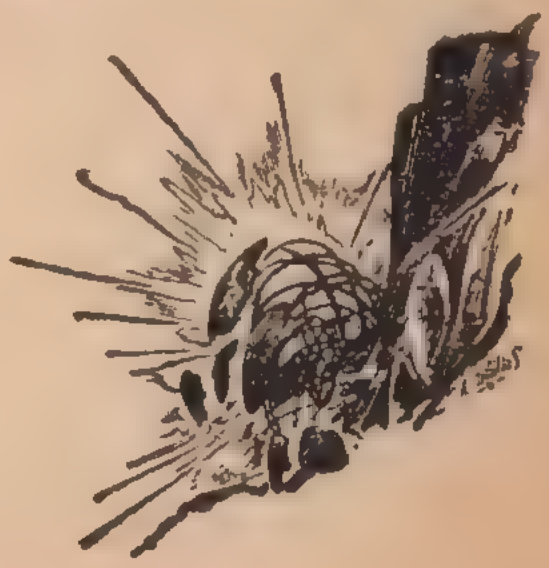
And he pulled off his shoes and waded out through the sedge to where he could bury and twiddle his burning toes in the soothing mud. Atkins swore at him and even threatened him with his gun, but Thurmon wouldn't budge.

"You go on if you want to, I'm O. K. this way," was all he would answer. And since Atkins had already learned on the tedious rocket voyage that Thurmon was equipped with but two speeds—slow ahead and stop—he swallowed his impatience and waited.

Hours later the mob of Martians accepted the newcomers' presence among them in a sort of resigned silence. Apparently the fugitives from the hunter gang had spread the news of two strange creatures, one of whom could kill at a great distance merely by emitting a flash of light and making a sharp noise. The agitated chatter of the monkeymen died as Atkins strode up to join them.

"Now, take it easy, boss," cautioned Thurmon again. "They'll come around all right if you don't overplay your hand."

But Atkins had his own ideas. He was bent on making a quick and overpowering impression. He stalked on into the densest part of the throng—a strange medley of males and females of every age



from babe in arms to patriarch—to the tall, bearded one he took to be the head ape. There he made what he considered a friendly gesture. He extracted a can of sardines and deftly opened it, displaying the rows of silvery little fish. A great gasp rose from the ones nearest, and they drew back with fear in their eyes. Atkins calmly ate the contents of the can, but his act did not help at all. They marveled, but it was the marvel of fear. But they did not run. They dared not do that.

"Boss, I keep tellin' you. Now, these people—"

"Oh, shut up," snapped Atkins, irritably. "It doesn't matter how they react as long as I establish my superiority."

Thurmon shut up. He knew, but had neglected to speak of it, that these monkeys were fishermen as well as hunters. While he bathed his feet he noticed some, standing in a circle neckdeep in water, surrounding fish as they had tried to do the rabbit. They knew what fish were, and that they did not come in airless, waterless cans. What Atkins was doing smacked too much of magic, and while magic impressed the primitive mind, it also made it distrustful.

The sun was getting low, and soon the tribe began its march across the sands toward the hills, regardless of the presence of the strangers. At Atkins' insistence Thurmon went along. It might be several hundred below by morning, Atkins pointed out, and the vegetation about was too green to burn. The caves were the only place where they could survive. Moreover, he wanted to study the Martians' habits through a whole day's cycle. After that he could plan his line of attack more intelligently.

"Huh," said Thurmon, but reluctantly plodded through the sands.

That night Atkins committed the ultimate error. The caves, as he had supposed, was where the Martians spent the cold hours. But there was no wood anywhere about, nor would it have helped if there had been, for Atkins was a non-smoker and had not thought to provide himself with matches. So there was nothing for it but to do as the monkeymen did, huddle up in clusters for mutual warmth.

For prestige reasons, Atkins chose the head man's cave, and therein lay his error. Since he had publicly established himself as a magician, the chief's wives assumed him to be irresistible. Therefore, when he came amongst them for warmth, they acted according to their dim lights. They forsook their lord and master and huddled about the new. Thurmon growled a warning against it, for he sensed a rising aura of anger. But Atkins was proof against anything his moronic companion could urge. He certainly did not relish the nearness of the unwashed female Martians, but warmth he had to have for survival.

Thurmon glimpsed what followed from a distance. The cave was large, and the various families grouped themselves according to

rules of their own. Thurmon, ever careful to avoid offense, selected a group of young bachelors with which to pool his calories. Consequently he was too far away from Atkins to render further counsel. At any rate, either to clinch his position as planetary miracle maker or for some lesser purpose, a little after it grew pitch dark Atkins turned on his flashlight. Its sweeping rays caught scores of monkey-men in the act of preparing for slumber, and howls of outraged privacy reverberated in the cave. They sprang at him, snarling. Then the light went out, and on its heels there came the sound of scuffling, heavy grunts and labored panting. After that there was a long and ominous silence. Then later, much later, the deep breathing of profound slumber. And that, Thurmon's instinct told him, meant that his companion Atkins was no more. The Martians were a simple folk, and wanted no part of supermen.

Three days later Thurmon and the tribe parted company. Their life was simply too strenuous for him. It did not make sense, even to his limited mind. The pattern of it was invariable, and not much different from that of range cattle. Never sufficiently fed, they perforce had to follow the sun on an endless trek from one end of the fertile belt to the other. They walked incessantly, consuming the scanty energy snatched from the growing plants almost as fast as they acquired it. And they dared not stop. For the cereal grasses on which they fed occurred only at random, and nowhere was there enough in any locality to keep them in food for more than a single day. The returns from their inefficient hunting and fishing methods were equally precarious, and they were burdened with the further necessity of making the three to ten mile hike twice a day to the nearest cave.

"Nuts to that," muttered Thurmon to himself, and parted company with them amiably. For he had found that his occasional grunts conveyed to them approximately what he meant, and conversely, he could understand most of their chattering. His and their uncomplex minds had much in com-

mon—they harbored few thoughts and those of the most elemental nature. The gap between their languages was not a hard one to bridge. After they had regretfully gone on, Thurmon took stock of his situation.

"All this walking, now," he told himself, "is plain silly. Why should a man wear himself out just to keep warm?"

He hated work, but he hated dragging his feet through yielding, hot sand more. So he hunted out a patch of clay of the right consistency and molded it into big flat bricks, working some rushes in so it would hold together better. By nightfall he had built a mud igloo that would suit nicely, and he scoured the desert margin for dry grass and twigs and found them in plenty. Being a smoker he had matches, and therefore he passed that night quite comfortably. There was just one drawback to his contentment. He had violated the primary rule of his long and parasitic life. He had done an honest day's work!

After that he rested for three days and found life good. There was no one to tell him when to get up or what to do, or to reproach him for his idleness. It was ideal, *but*. It was the food that bothered him. He detested the Vitalex tablets he had to live on. They had sustenance, and after that was said all had been said. He craved a more normal diet. So he undertook to do something about it. There came another red letter day in his life—the day he lay and took thought upon his future, that portion of his life he had hitherto left to Fate. But Fate could no longer help him. Here on this comfortless planet there were no friendly back doors, nor in emergencies even a hospitable jail. If anything was to be done for him, it would have to be by himself.

It was an unwelcome thought, but the more he considered it the more inescapable he saw it to be. The upshot of his unaccustomed thinking resolved itself into a simple choice. Was he going to do it the hard way, the way the monkey-men did, or was he going to cut corners? Not the hard way, certainly. And the reflection did something to Bummy Thurmon that two score competent judges had failed to do. It stirred him to action.

There was the matter of wheat and corn, the handiest food available. Why gallivant from one pole to another trying to find a few grains here and there when it could all be grown in one spot? The answer was obvious. So the lumbering Thurmon roused himself from where he lounged and went hunting for heads of grain overlooked by the passing tribe.

He found bushels of it, but carrying it back to his hut in handfuls put a heavy burden on his feet. There were far too many trips required. He considered that, and then sat down and wove himself a basket from some reeds. It was not a good basket, but it served, and in a few days more he had his seed. After that he drove himself to

more drudgery, pulling weeds and worrying the ground with a crooked stick as he had seen farmers do with iron tools. He scattered his kernels of grain on the ground and called it a season. It had been brutally trying work, but next year there would be a crop and hardly any walking involved to garner it.

Thurmon thought he had earned a winter's rest, and started in to get it on a full-time basis. But in a few days he found the cereal diet as monotonous as the pellets. He didn't relish his corn and wheat chewed raw as the Martians did. Moreover, he had discovered that there were plentiful quantities of beans and peas about, drying in their pods. Now, if he had some way of boiling those—

The pottery he made was something worse than primitive, but after an appalling lot of breakage he contrived a pot that stood the gaff, and his comfort increased. On good days he ranged farther afield and found more food, which he stored in additional igloos he built for the purpose. Pretty soon he could dig in for the winter and call it quits.

He heaved a great sigh of relief and settled into the crazy hammock he had contrived. It was then the Big Idea hit him.

"If this is good for me," he asked himself, "why ain't it better for them monks?"

All afternoon he rocked lazily and examined that question. Surely those poor benighted Mars creatures didn't enjoy endless hiking any more than he did, and it was a cinch that none of them ever had enough to eat in his life. And they never could be sure, either, that the next day's hike would bring enough food. Wouldn't they be glad to swap their labor for less work, more food, and security? He scratched himself and chuckled.

"Sure they would!"

It was a radical concept. He, Bummy Thurmon, the shame and reproach of the civilized world, seriously contemplating work in the abstract! Now he saw that it was necessary, even dignified. That is, if someone else did it. It was an

interesting idea. He now viewed work from an altogether new angle. He was looking down on it, as it were, not up at it. He was the prospective employer, not the poor sucker being hooked.

The Thurmon who hit the ball fairly early the next morning was a temporarily changed man. He saw now that to induce the monkey-men to stay he would have to have something immediate to offer. He had never given thought to the thing called capital spelled with a big C, but dimly he perceived its necessity. So he cleared more ground and planted more seed so that he would have enough to share.

When the seed ran out he discovered there were still other things lacking for his comfort. Meat, for one. That led to more work at first, but a little later it turned to sport. He built rabbit traps, and one fine day it occurred to him that if he could weave a basket he could also weave a seine. So he made one and then some more, and waded out into the slime to set fish traps.

In a little while there was more fish and game than he could eat. He split and dried the surplus and experimented with smoking some. What emerged from his processing would never have passed a terrestrial market inspector, but for his indiscriminating palate it was good enough. And as the slightly saline waters of the canal receded for the winter, he found desposits of salt in flat places. Those he harvested and put away. The richest haul of the bleak winter months came the day a pig walked into one of his snares. The pork was a wonderful addition to his table, but better yet, when he skimmed the boilings he found he had lard. Thereafter he could fry things.

It must not be supposed that Thurmon worked hard all the time. Far from it. There were days on end when he backslid and just slept. Nor did he ever cease to bewail his hard fate and curse the smooth-talking judge that had consigned him to it. But he buoyed himself up with hope—hope that he could sell his share-work notion to the simple-minded Martian people. After all, they were used to work, and he had solved their most pressing problem—food and shelter.

The day the vanguard of the great tribe showed up, he met them a little beyond the northern boundary of his plantations. They were scrawnier and hungrier than ever, evidence that the pickings up above were not good, so he met them with a broad grin and truly magnificent hospitality. He had with him a pair of baskets brimming with corn and wheat. And while they ate the stuff ravenously he conveyed to them by grunts and gestures how it came to be that he had so much and what they could do to merit the same. He explained also what he meant by a house, and the useful "sunweed" he had discovered which would keep it warm.

It was no tremendous surprise to Thurmon that the majority of the tribe viewed his offer with skepticism. People were like that. The older ones shook their heads. It

was too radical an innovation in their way of life. Moreover, legends were already growing up concerning the two strange aliens who had emerged from the desert, and about what befell the one who dealt openly in magic. They preferred the safer course, and so went on, carefully skirting Thurmon's plantings and taking what wild grain there was between him and the desert.

The next day the conservative members of the tribe continued their migration to the south. They dared not fall behind their schedule a single day, for the grain ripened with the sun, and the sun awaited no man's convenience, much less on the outcome of wild experiments. But a half a hundred of the young and daring elected to stay and share. What with their wives and babes and the additional score or so of young bachelors, Thurmon was hard put to find places for them. In the end he divided them into two groups, one to settle beyond his borders to the north, the other to the south, and he fed them while they built their houses. It was agreed that for the advance of food for the first pioneer year, they would also work his own fields.

In this way was born Mars' first community, and Thurmon's second winter was much easier than the one before. Nevertheless, he had to stay awake daytimes much more than he liked. Until his apish farmers had learned their tasks, there was much supervisory work to do. But *next* year, Thurmon assured himself, he could commence to live the life of Reilly. This year's graduates could instruct next year's converts. Meantime new problems were arising daily, and they required decision by him whom the Martians regarded as a superman. First off, there was the question of who did what and when?

Thurmon found himself issuing decrees. It was women who drew the chores of basket and net weaving, pottery making, and the tending of fires. It was the children who scoured the desert rim for the dry stuff needed to feed the voracious "sunweed." As to the men, their lot was to gather seed, weed, plant and plow, and rob the traps and nets. And having set the

watches, so to speak, Thurmon attempted to retire for the winter.

It was not to be. Not yet. He had to teach basketry and cookery, and eventually how to grind meal. None of his inventions were of a high order—they arose simply from things he missed and remembered vaguely how they might be provided. But they were hailed with enthusaism by the tribe which he now captained. His production of a sling, for one, enabled the killing of animals too wary to be enticed into the traps. And having acquired an abundance of carcasses, it occurred to him that the skins—previously gnawed for what food value they had and thrown away—could be made into garments for the cold time. But that suggestion inevitably evoked the question how? The solution cost weary Thurmon many hours of brow-knitting, but in time he popped out with the answer. He had patched his own clothes and sewed on buttons, but here was neither needle nor thread. For a needle he contributed the prong of his belt buckle, for threads he unraveled the guide lines of the 'chutes. And then a bright young monkeywoman took his notion a step further. She found the secondary uses of small bones, and how to twist weed fibers into cord.

A rare rainfall led to another chain of inventions. Thurmon's pioneer shack washed partially away, and he demanded that it be rebuilt of stone. There were stones aplenty in the desert, but their transport was the barrier. So the stoneboat was invented. It required the labor of many Martians to pull it, to the neglect of other chores. It was natural, therefore, that Thurmon should remember horses, and he told them how to catch colts.

Every year more recruits were obtained, and the passing migratory tribes dwindled. Every year brains developed as hand skills were acquired. Less and less did Thurmon—or the Great Turm, as the Martians called him, since they were unable to master complicated syllables—have to do. A generation of eager, grateful young monkeymen took over the supervisory jobs, coming to their venerated but slothful master only when troubled by problems too weighty for solution by themselves. Slothful Thurmon rarely stirred from the palace they built him save to move to another even grander. Not since the third summer of his coming had he permitted his dozes to be interrupted. But on days when he was naturally wakeful, he would hold court and scatter the pearls of his wisdom before his attentive lieutenants. Entirely without intent or awareness, he had hit upon the formula of great leadership. He delegated.

Were the pony-drawn stoneboats and grain drags too slow? "Hm-m-m," Turm would say, and close his eyes in thought. "Lemme see, lemme see." And after a long trance he would come out with a suggestion.

"Now wheels, if we could make 'em," he would say, "would do the

trick. A wheel goes somethin' like this—" and he would sketch out the basic idea of the wheels, or the lever, or the wedge, or whatever was worrying them, and leave the rest to them. They listened and went and performed. Or when they failed and brought back their sorry attempts for approval, he would criticize. But Thurmon discouraged that sort of thing, and he dredged his memory for things people used to say to him. Many of those *clichés* proved invaluable to his government. "God helps those who help themselves," he would say, to prod them into a solution beyond his own dull powers, and they would accept that contritely, and go out resolved to be more worthy.

The Martians labored long and hard, and it paid them. But their needs were steadily increasing, the more so because of the mounting demands of their lord and master. An unusual flood brought floating logs to them, indicating to Thurmon that somewhere on Mars was a forest. He told them in general how to build a raft. Later they crossed the canal and found the woods and brought back timber, whereupon Thurmon demanded furniture, and described it. To them it was one more revelation granted them out of Turm's vast knowledge of the wonderland from which he had come. So, under his direction, they learned to make axes from the flints of the hill caves, and later arrowheads for the marvelous machine, the bow. On marched progress.

One day, the wind being in the

"Without It, He'd Be Dead Right Now!"

"One thing saved him. Plasma. So if he gets well, he has *you* to thank. . . . Housewife Jones, Stevedore Smith, Sophomore Brown!"

And if he didn't get the plasma . . . if he didn't get well . . . would he have *you* to blame? You, who mean to go to the Red Cross blood bank, but never quite get around to it?

Don't give it a chance to happen. Go to your blood bank NOW . . . and win a soldier's undying gratitude—as well as—perhaps—his life!

The Red Cross Needs Your Blood . . . . NOW!

wrong direction, the question of sanitation intruded itself upon Thurmon's unwilling mind. There was no comfort in his palace and something had to be done. A man in his position shouldn't have to—

That was when the first drainage ditch was dug. The logical follow-up to that were more ditches—but for irrigation. The disposal of the dirt dug up brought other ideas, and that is how the roads and paths came to be crowned. A special class of young Martians came into existence, a class that in another world would have been called engineers. It is true they knew no mathematics, but they learned a lot that could be done with dirt, and also timber and stone.

Thurmon's craving for ease grew as more luxuries were supplied. It became tedious for him to hold court to hear the petitions brought by delegations from the distant villages. He delegated still more power, appointing local headmen and giving them authority in his name. He was instituting government, but he did not look at it that way. He was only ridding himself of bothersome detail.

* * *

It was many years after that before Turm's contented life drew to its close. Headmen from all the villages stood hushed before his cushy bed, while tearful concubines gazed out from behind the slats of their secluded quarters. The great man was mortal, after all, and was about to leave them.

"Not so bad . . . Mars ain't so bad," Turm murmured as he composed himself for that last, interminable nap from which no devoted worshiper would rouse him. "That judge wasn't lying as much as he thought. 'Plenty of grub, lots of sleep,' he said, 'and nuthin to do.' Yep. It come out that way. But it wasn't easy goin'. I had to work one year. I had to work like hell."

It was spoken much too low to hear. The palace scribe—for Turm had taught a few the elements of writing—bent over to catch the famous man's last words.

"Yeah," said Turm, more audibly, "I had to come millions 'n' millions of miles to find it out. Hard work pays—"

The scratching of the scribe's stylus drowned out the last whispered phrase, "—but not too much of it!"

From atop the great basaltic pyramid in the heart of Azoth the colossal image of Turm smiles its benediction on the metropolis of Mars. Turm, the wise and patient one, stands unique among the gods created by primitive man. Not a god of carnage and thunder he, but one of peace and industry. Especially industry. For were not his last words "Hard work pays"? Where else in the history of mankind did a race have such a leader? What other race compressed within a single generation the evolutionary program of ages? The answer is nowhere. Great was Turm, founder of a civilization!

THE END.

PROBABILITY ZERO

ICICLE BUILT FOR GROO

by

John H. Pomeroy

It was sheer luck, of course, my running into Leopold that way, right in the middle of town. I steered him into the nearest joint for some beer and started tossing questions at him. He just grinned, and flashed a bankbook at me that seemed to be full of license-plate numbers.

"Yeah, fifty thousand bucks. Those buyers just drooled over that stack of Groo skins—not a mark on them. What Groo? Well, that's quite a story . . . hey, boy, more of the same!

"Well, Felkel, and McLaughlin. Kitchen and I were running a seismo survey for Hurst Oil in the goonipers near one of those little off-shoot canals the other side of Marsport. You know . . plant some nitramine about twenty feet down, set off the blast by remote, and after things have calmed down a bit, you and the other crews scattered over two hundred miles of desert read your oscillograph traces of the explosion waves, and how they bounced off the different rock strata underneath. No salt domes, or other good oil structures as yet, but I had done almost as well, by stumbling over one of those old deep-driven wells the Martians had sunk maybe fifty thousand years ago, going after the last of the water on the planet. Better yet, the thing was still in working order—good engineers those old boys must have been—and I took the opportunity to reload the water tanks in the creeper truck. You know, it really gave me to think—that. Using this well, put down back in the days when our ancestors weren't having to worry about the iceman because the glaciers were making regular deliveries every day. It was a sort of symbol of the whole planet, and its

fight against drought and loss of air. Remember some of the pictures in the old temples?"

Well, there I was, anyway, running the water through the filter stills, watching the sun go down, and trying to figure out what I was going to make the day's crop of yeast-meat taste like for supper. Of a sudden, there was a *wheep! wheep!* and one of these feathery little Groo came skimming out of the twilight, circling around the filter units, attracted by the water, I guess. They go nuts over the stuff, I've heard, following the scent of it for miles, and bloating themselves with it when they can get it. Doc Welcher told me they've got a set of storage tubes all through their bodies—they are practically all camel hump.

"However, I wasn't thinking about all this at the time—I was remembering the coat of Groo skins I had seen in New York, in one of the windows, and the sixty thousand dollar price tag on it. So I put some water down in one of the developing trays and the little Groo whent . . . I mean went . . . *wheep wheep* again and emptied it in a couple of seconds and sat back on its silly little tail and wheeped again. Then it burped and looked at me. And I looked at it. And I thought of the price tag and made a grab for it; and off it went into the dark again wheeping its fool head off, leaving me with a couple of those long luminous furry feathers and a foolish expression.

"It was then that I got my idea. There must be more of them around. So I got every pan, tray, dish I could find in the crawler, filled them up with filtered water, and laid a charge of nitramine in a crack in the rocks nearby. It was really night by now, and getting colder by the second. The ground, and the pans of water, not to mention me, were all sitting there, radiating all our heat out into space through that thin stuff they use for atmosphere up there. I wanted to stick a thermometer in the trays, but I couldn't risk disturbing them so I got off a few hundred yards and sat watching the spot through the night glasses, wishing some of these writers who harp on the glory of the moons of Mars had to find their way around by them. The heaters in my suit were turned up full, now. I guessed that by this time, the water in those trays must be down to six, seven degrees below freezing, and still dropping."

He waved off my objections to this and went on:

"Then a whole chorus of wheeps came from downwind. It must have been half the Groo in the universe on the move, bouncing over the rocks, hopping through the cactusy growth in long, looping parabolas, on the trail of the water I had put out. When I saw that they had drained the pans, I clicked the switch, and off went the nitramine. Well, that was all there was to it. I walked over, piled 'em up, and skinned 'em before they had a chance to thaw out."

"Thaw out! Wasn't it the blast that got them?"

"Naw—the shock of the explosion caused all that super-cooled water they had drunk to crystallize, and there they were—quick-frozen in their tracks.

A MATTER OF RELATIVITY

by

P. Anderson

Private Bill Wilson picked up another potato with a thoughtful air.

"Don't worry," he reassured his fellow sufferer. "K.P. won't last forever. In fact"—he leaned forward with a confidential air—"I happen to know the war will be over by June next year."

The other looked suspiciously at him. "I suppose you've invented some new weapon," he said with heavy sarcasm.

"How'd you guess it?" asked Wilson in surprise.

"I used to work in the patent office."

"Well, this is the real McCoy. I'm working up the final details and I'll present it to the general staff in a few days. Of course, if you'd like to make a small bet—"

His air of conviction disturbed the other. "How're you so sure?"

"Well, I'll tell you if you keep it quiet . . . in fact, I know you will, because I've seen my idea used in '43 and it was a complete surprise."

"I suppose it's a time machine." The sarcasm was back.

"Not exactly. Look, do you know anything about relativity?"

"A little."

"I know everything," said Wilson modestly. "I'll explain in simple language: Einstein has shown that time is only a dimension. It has no separate existence from the three space dimensions, but exists with them, forming the space-time continuum which is our universe. Things move—or should I say exist—along their world lines, their paths through this continuum.

"In this scheme of things simultaneity has only a relative existence. To speak very loosely, the continuum is viewed from different angles by observers with different motions. Events that seem simultaneous to one observer might not appear so to one with a different motion.

"Of course, Earth people all have such similar motion as to have the same ideas of simultaneity. But it occurred to me that if I could adopt a different motion I could acquire a different viewpoint.

"That's what I did. I built a little machine which can alter my vibratory motion. I can control it exactly, so that any chosen slice of events can seem simultaneous to me and not so to the rest of Earth, and vice versa."

He paused for breath, and his companion inquired, "And what did you do with it?"

"Out of curiosity," replied Wilson, "I made next year seem simultaneous with this to me, so as to read the future. In a few days, as I said, I'll offer my invention to the

brass hats. They'll adopt it with wild cheers and spend a few months producing vibrators. Then the United States will strike. At leisure, with no great hurry, they'll attack all the Axis strongholds—but to the Japs and krauts they'll be in all those places *at one time*. Before that tremendous assault the Axis will crumble in a month. So you see, thanks to my genius, the war's already won."

The other private glared suspiciously at him. "You ought to tell that to Probability Zero," he sneered. "I suppose they'll make you a general for that."

"They offered to . . . will, rather," said Wilson blandly. "But I said I'd rather work up through the ranks."

"Even Mr. Campbell would shoot you for that one!" howled his listener.

"It's the truth," insisted Wilson. "I'll tell you why. You see, in 1943 I will play the stock market and run up a terrific debt. A general's pay won't cover it—but the combined pay of all ranks will. So, I'll rise through all the ranks and use my vibrator to make those several years seem simultaneous to me. I'll draw all that pay at one time, and use it to pay off my notes." He sighed. "But that same trick forced—will force me to retire only a month after I become a full general."

"How so?"

"Well, I'm used to having things happen one at a time, and I got a little confused by all those years happening at once—couldn't keep 'em straight. In 1953, just before I became a full general, space travel was developed; and when I'd just risen to that rank I was called to a staff meeting on what to do about the belligerent attitude of the Martian Empire. My advice was asked.

"But I got my events mixed up. In 1944 I was a mess sergeant instructing a group of rookies in the art of disrobing potatoes; in '53 I was a general at an important staff council. I was confused.

"When as a sergeant I told my yard birds, 'The thing to do is to get tough. If they object, just get a couple of cruisers and blast 'em out of existence'—well, I could pass it off as a joke. But when as a general I was asked what to do about the Martians I replied, 'Take them up in your left hand one at a time. Slip your knife under their jackets and start peeling them off'—that was one too many. The only conclusion was that *chiroptera* resided in the upper chamber of my steeple. I was honorably discharged as being 'no longer mentally capable of continuing the previous excellent record', and everyone said what a pity it was."

THE THIRTY-FIRST OF JUNE

by

Frank Holby

Adjutant lieutenant Hideo Oshito, standing on the beach of Thursday Island, triumphantly watched

thousands of Jap troops being landed. Tanks, artillery, a complete attacking force was being disembarked.

An orderly approached Oshito: "General Yasamura wants you to report to headquarters immediately. Please follow me."

They soon arrived at headquarters, where a meeting of the staff was going on.

Oshito saluted, and stood respectfully to one side, noting meanwhile the huge map of the island, over which the high officers were gathered.

General Yasamura was explaining the plan of battle to his confederates: "You can see, gentlemen, that this island is shaped like a great triangle. We have landed some fifty thousand men, completely equipped, and thus control the two western points of the triangle. The American army controls only the easternmost part, the apex of the triangle.

"Opposed to us are but ten thousand American troops, who cannot escape by sea. We will be able to annihilate them.

"We must push forward our attack, and destroy the Americans within twenty-four hours. This should be easy. They have little ammunition and no artillery. We know—I emphasize that word 'know'—that no reinforcements will be able to reach our opponents for twenty-four hours. Their nearest ships are four hundred miles away. Incidentally, the Americans have placed their front lines about three miles west from the easternmost part of the island. Thus their entire force is contained within four and one half miles.

"Orderly, take down my order of the day."

An orderly poised his pen.

"Legions of Asia, our hour has struck. The Americans will be unable to get reinforcements for twenty-four hours. We must destroy them within that time. Show them no quarter!"

The orderly rushed to distribute the order.

Yasamura spoke again, "It is now 7 a. m., June 30th. By 3 p. m. there should not be an American alive on Thursday Island."

"Do you want our entire force to advance en masse?" asked one of the aides.

"Yes," replied Yasamura. "It will be quicker that way."

At 8 a. m. Lieutenant Oshito was astride his horse, watching the Jap troops begin their advance. From his vantage point he could see the thousands of soldiers, led by tanks, press forward. Wave after wave of olive-green lapped on. The sun glistened on the helmets and field guns.

For several miles the troops marched on, prepared to utterly crush an ammunitionless, cannonless, and solidly packed army.

The Jap troops were in sight of the enemy lines. They approached closer—four hundred yards, two hundred yards, still not a shot had been fired. They passed by a curious white boulder, weighing many tons. The men of Nippon pressed confidently on.

Then the heavens were rent asunder! Shells screamed into the Jap mass. Tank after tank blew up as contact was made with land mines. Flame-throwers spewed forth their dreadful chime. The Japs were milling in a great circle, while shrapnel and cannister tore gaping holes in the ranks.

Hideo Oshito spurred his horse forward. Around him were small, confused groups of Jap soldiers. The slaughter was continuing in the distance.

Suddenly Oshito whipped out his sword, and gathered several hundred men in a loose formation.

"For the Emperor," yelled Oshito, and led his little band forward.

Men were down all about him. He fired his pistol into the face of a grinning Yank that rose to meet him, fired, and fired again. Then his gun was empty. He drew his sword, lunged at a khaki uniform. His horse stumbled and fell. Oshito lost consciousness.

He dimly heard a voice say, "This Jap was the bravest of all, and maybe we ought to tell him how we did it."

Oshito struggled to a sitting position.

"I speak English some bit," he said. "Would want know how help arrive from nowhere."

A Yank spoke: "Our forces landed on the west end of the island, just where your troops disembarked. We were in a bad way and desperate for equipment and reinforcements.

"However, our supply ships were twenty-four hours away, and you could land and attack in twelve hours. So we just marched across this island, whose position is 20° N. Latitude and 180° Longitude, right across the International Date Line. That big white boulder is the marker for the Date Line. We therefore gained a whole day, got our supplies, set up our position and entrenched our heavy artillery, and just waited for you to come. You know the rest."

Lieutenant Hideo Oshito lay back, eyes glazing.

THE CASE OF THE INVINCIBLE PIRATE

by

Edward Shulman

"Aaahhh! Fine drink, this Martian Loarb. Nothing else like it." This from my old friend, Vezg Morj, the Venusian detective. "It's clear as crystal. Almost invisible! Say, that reminds me, did I ever tell you how I captured Fross Razof, the space pirate?"

"No, you didn't."

"Well, it was like this. When Razof attacked the space liner *Darwin*, the Tarmograph operator managed to get a message into the ether. A patrol ship happened to pick it up, and trailed Razof's ship, the *Black Spider*, to the pirates'

hideout on Ganymede. It Tarmographed a message back to headquarters, and was ordered to attack, but the pirates had a regular fortress, complete even to Friedloff energy cannon. The patrol ship was utterly destroyed.

"Well, the chief was mad, but you can't fire a high-powered energy gun from a ship, nor can you put up a screen which will hold when it is hit by a blast from a Friedloff cannon.

"I was in my office wondering how this would work out when the television screen lit up. It was the chief. He asked me to come right over, so I did.

"'Vezg,' he said, 'I don't know what to do. You're the best man on the force, so I leave it up to you.'

"'Chief, I'll do my level best,' I replied.

"On my way home I stopped in the Space Patrol labs. That's the place where the new super-fuel was first made, where the Tarmograph was invented, where nebosal, the perfect food, was created and hundreds of other things originated there. I told them what I thought I would need, and watched them work on it. When I got home I had a good hearty meal and went to bed.

"Next morning I went down to the spaceport, climbed into the little speedster, and set off for Ganymede. After a long uneventful trip the little moon came in sight. I set the ship down fairly near the fortress, but far enough away so they could not hear it land. I put on my spacesuit, and went out through the air lock, leaving the outer door open. When I reached Razof's fortress I walked passed the guards, through the corridor, and into Razof's room. I knocked him out with a low-power ray, and put him in a spacesuit. I put him over my shoulder, walked out into the corridor, past the guards, through the jungle, and into my spaceship. I arrived on Earth and turned Razof over to the authorities."

"I realize that they wouldn't hear the ship, but why didn't they see it? And how did you get past the guards, especially when you were carrying Razof?"

"Elementary. I had the men at the Space Patrol labs paint the ship and the two spacesuits ultraviolet, so I was invisible!"

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Brass Tacks

If you take out the vacuum, you've got only the ether left, and everyone knows that has to have terrific density.

Dear Mr. Campbell:

Your editorial in the February issue of Astounding, in reference to the problems connected with obtaining efficient vacuums, has come to my attention. I most heartily disagree with your obviously uninformed viewpoint.

From your editorial: "Practically nothing is as expensive as practically nothing."

I am sure that if you had consulted our price catalogue—which I am forwarding to you under separate cover—you would have discovered that the difference in price between our "SOFT" and "EXTRA-HARD SPECIAL" is surprising, and this is regardless of the size or shape vacuum you may desire.

Therefore, I think you will agree, that in all fairness to our concern you should include a comma. The comma makes a universe of difference. Viz: "Practically, nothing is as expensive as practically nothing."

I realize, however, that since our concern very rarely advertises, and since our work, heretofore, has been a civilian-secret—under the most strict civilian-censorship—that your error was probably not intentional. And also, that your readers are under the same misapprehensions. Consequently, I am writing this to set you right.

In passing, I wish to add that a glance through your magazine indicated you lean favorably toward the now rare Attic Genius—or was it Garret—and I am willing to correspond with any surviving specimens concerning their vacuum needs.

To explain: Our concern manufactures nothing. We fabricate the finest vacuums you can buy anywhere. The reason for our superiority in the field is that instead

of taking a space filled with gas particles and trying to remove said gas particles to somewhere else to make nothing back where you were in the first place—we simply manufacture the vacuums direct. I will explain this process in a moment.

Naturally, this enables us to make vacuums of any size or shape to fit any existing electron tube. With two weeks' notice, fee in advance, we can make up any type vacuum to meet your special needs. Ten percent off on large orders.

Our spring catalogue includes our four most popular types:

1. SOFT—#634-B-407. (Some workers class this as "MEDIUM." Quite inexpensive for small budgets.)

2. HARD—#113-HC-23. (This was a very popular vacuum last season, and we still have on hand a variety of models in assorted sizes but only three shapes. We have a portable kit suitable for making small adjustments on the #113-HC-23 which I will explain below. We are selling this type out at bargain prices with a slight additional charge for wrapping, packing and shipping. In fact, I have to wrap them myself—you know how the help situation is.)

3. ABSOLUTE #999-X. (This is the type I recommend for the worker who demands the finest in everything. For the man who wants precision and results, type #999-X will afford hours of guaranteed performance. ABSOLUTE #999-X is easily shaped, quite stable and holds up well in storage.)

4. EXTRA-HARD SPECIAL #1-A. (This type is still in the experimental stage but will be supplied to addicts in their attics. Naturally, when we first manufactured our ABSOLUTE #999-X type, which is an absolute, total, perfect, flawless, empty, exhausted vacuum, we realized that before long the discriminating worker would be demanding more—I should say—less, in his vacuums. Consequently, we have produced the EXTRA-HARD SPECIAL #1-A type which is less than a total vacuum. When our laboratories first succeeded in extracting the actual vacuum itself, leaving what we now call our #1-A type, it was referred to as VACUUM-MINUS—which listing it is sometimes still called in the scientific periodicals. This type has extremely interesting characteristics that will fool even the most capable worker. It baffles us completely. Furthermore, while our other three types are rather light—this #1-A is extremely heavy. Our lab would appreciate opinions from experimenters as to how come(?). Will welcome suggestions to remedy this fact as our shipping department states that the present shipping costs of #1-A are prohibitive. This only comes in one style until we know what we got here.)

We realize that "degassing" your equipment is usually quite a problem. In ordinary times this would be of no concern to us since we are primarily concerned with selling you the nothing to fill it with. But we do have small portable degasser models—portable, that is, if you

have a few trucks handy—that will do a dandy job of "getting" for you. Price on request. Send stamped self-addressed envelope.

We also have a kit, not as portable as above, that you will find handy for making minor adjustments with on some vacuums, such as: Shaping, bending, tapering, drilling—in fact, any sort of adjustments you might need to get a tight fit and better performance. If you intend installing this kit in your attic lab, we furnish at slight additional cost a few steel girders and a couple of bags of cement for bracing and so forth. You'll have to get your own sand—we haven't got any.

We did have a cleaning plant for dirty old used vacuums, but we haven't got it any more—somebody misplaced our priority. And we couldn't get good cleaning stuff anyhow. Better just save them.

In closing, I feel a brief description of the method we use in fabricating our ABSOLUTE #999-X type vacuums would be of interest to your technically minded readers.

It is quite simple. First, you take a _____ and carefully _____. After this process has _____ for a period of _____ you add _____ of _____ in addition to _____ 's of _____. Under pressure, _____ takes place, followed by _____. Naturally this takes special equipment. But when the _____ has _____ you slowly ___ the ____ and _____ the product until _____. Next, _____ substitutes for _____ and you have our ABSOLUTE #999-X. *(Censor: "Ooops—sorry!")* Not very sincerely—Jerry Shelton.

P. S. Patents Pending on above process.

Very P. S. We have a large, slightly used vacuum, still in fair shape, that has been laying around here somewhere and we would like to dispose of it. Write in care of our storage department for particulars. Ask for Joe.

Maybe Bob Swisher could conduct that character research. He's got quite a file—

Dear Mr. Campbell:

Having just recently been home on furlough, I have had the opportunity of absorbing six months' worth of the mag at one time.

While I found appearances somewhat changed in a few particulars, it's obvious that Astounding is still "on the ball". The shrinkage in size seems not to have hurt anything but the covers, which are not all they used to be. That fact is outbalanced, however, by the slick paper section which permits photos with the articles.

For what one man's opinion is worth, I thought the best stories from November to April were:

November: "The Beast"—Van Vogt

December: "The Debt"—Hull

January: "Technical Error"—Clement. "Ogre"—Simak

February: "The Anarch"—Jameson

"Plague"—Leinster

March: "The Rulers"—Van Vogt

April: "Sanity"—Leiber

I thought "Technical Error" was the best of the lot, the January cover the best with March a good second, and the best issue in general was January.

By all means, keep Artur Blord and Don Channing on the first team. They always "make contact" and "produce the goods", even when not at their peak.

Another one who is always up near the top is Van Vogt, which needs no pointing out, of course. (But was the "Changeling's" father a Slan?)

The articles really add a lot to the magazine, especially with Richardson and Ley on the job.

I found one of the most interesting items was Walter A. Carrithers' report in the November Brass Tacks. While I think he should have made some allowance for the older pieces having had more time to be rementioned, I am glad you gave his letter so much space. I now suggest that Mr. Carrithers get to work on listing the dozen or two most popular *characters*—and see how many we remember.

By the way, congratulations on the showing in that list of certain of your authors, such as Campbell and Stuart!

Before closing, I will throw in my April ballot on the chance that it will be in time:

1. "Sanity"—Leiber
2. "The Long Way"—Smith
3. "The Bureaucrat"—Jameson
4. "The Changeling"—Van Vogt
5. "Lobby" and "Invariant" both good

The Editor's Page and the articles rate special mention.—Horace B. Fyfe.

You should tell Hattie, it isn't really alcohol they're after—that's just incidental. Really they want the ethanol present in the sap.

Dear John:

I am in trouble again. It is Aunt Hattie again. I told you about Aunt Hattie in my last letter.

A couple of weeks ago the Dean of Physiology in one of our better known universities sent me printed copies of his more recent lectures. Aunt Hattie got hold of 'em.

One of them dealt with the human tendency to use an aqueous solution of alcohol for beverage purposes. The academic gentleman is agin' it. (THAT is right up Aunt Hattie's alley. She's a rabid prohibitionist.)

Well, all that is a matter of personal opinion. Who am I to make an issue of folks' personal convictions? By themselves, the foregoing facts had no significance.

However, in his dissertation on alcoholism, the learned gentleman sort of favored the idea that addiction to alcohol involves an ambivalent psychosis—a desire to escape reality, et cetera. THAT idea kind of stuck in Aunt Hattie's mind. BY ITSELF, even this additional fact didn't matter.

However, Aunt Hattie dug up an

article in a national magazine wherein some scientific chap points out that Homo Sapiens isn't the only critter addicted to alcoholism.

This fellow told about monkeys getting pie-eyed on palm wine and other equally scandalous behavior by various animals. He told about birds that became rummies and ended up by describing what he called a "Butterfly Bar."

This Butterfly Bar thing is a place where the bark has gotten knocked off a birch tree so the tree sap oozes out at the spot, then ferments, offering insects the makings of a free binge.

This chap claims beetles and butterflies turn addict; that they hustle right up to this Butterfly Bar, dip the proboscis deep without even bothering to blow off the foam, and drink until they fall to the ground completely squiffed and helpless. THAT stuck in Aunt Hattie's mind also! Inebriated monkeys and even a bibulous parrot did not faze Aunt Hattie, but habitual addiction among butterflies got her down.

Now all that is mildly interesting but still you wouldn't think it would make any difference in MY life! After all, I do not know any butterflies personally!

John! You just don't know my Aunt Hattie!

NOW, what Aunt Hattie wants to know is if butterflies are subject to ambivalent psychosis?

Aunt Hattie wants to know if a butterfly is sometimes filled with a poignant, unbearable yearning to return to the peace and comfort of the cocoon! Or maybe if a butterfly gets completely fed up with the utter futility of fluttering hither, thither and yon and yearns to "get away from it all"!

I assured Aunt Hattie that I am not acquainted with any butterflies but you just can't discourage that woman. She keeps nagging and nagging at me to find out if maybe some eminent psychologist hasn't written a monograph on:

"Case Histories of Ambivalent Psychosis in Butterflies."

Now obviously I can't send out a circular letter to the academic world in search of such a dissertation. Moreover, it seems to me that in the last twenty-five years science, science-fiction and fantasy have all so overlapped into each other's fields that a fellow can no longer distinguish with certainty just where one ends and the other begins! Therefore it seems quite logical to appeal to you and your readers for assistance in my dilemma. After all, Aunt Hattie is a frightfully persistent person.

I have a horrible premonition Aunt Hattie will stay with us all this year. I keep seeing a vision of Aunt Hattie sitting on the front porch next summer watching the butterflies flit about the lawn while tears stream down her face and she murmurs in tones of heart-rending sympathy: "Pore little things! Pore, PORE, PORE little things! They are trying to get away from themselves!"—George A. Foster, Stoughton, Massachusetts.

THE END.

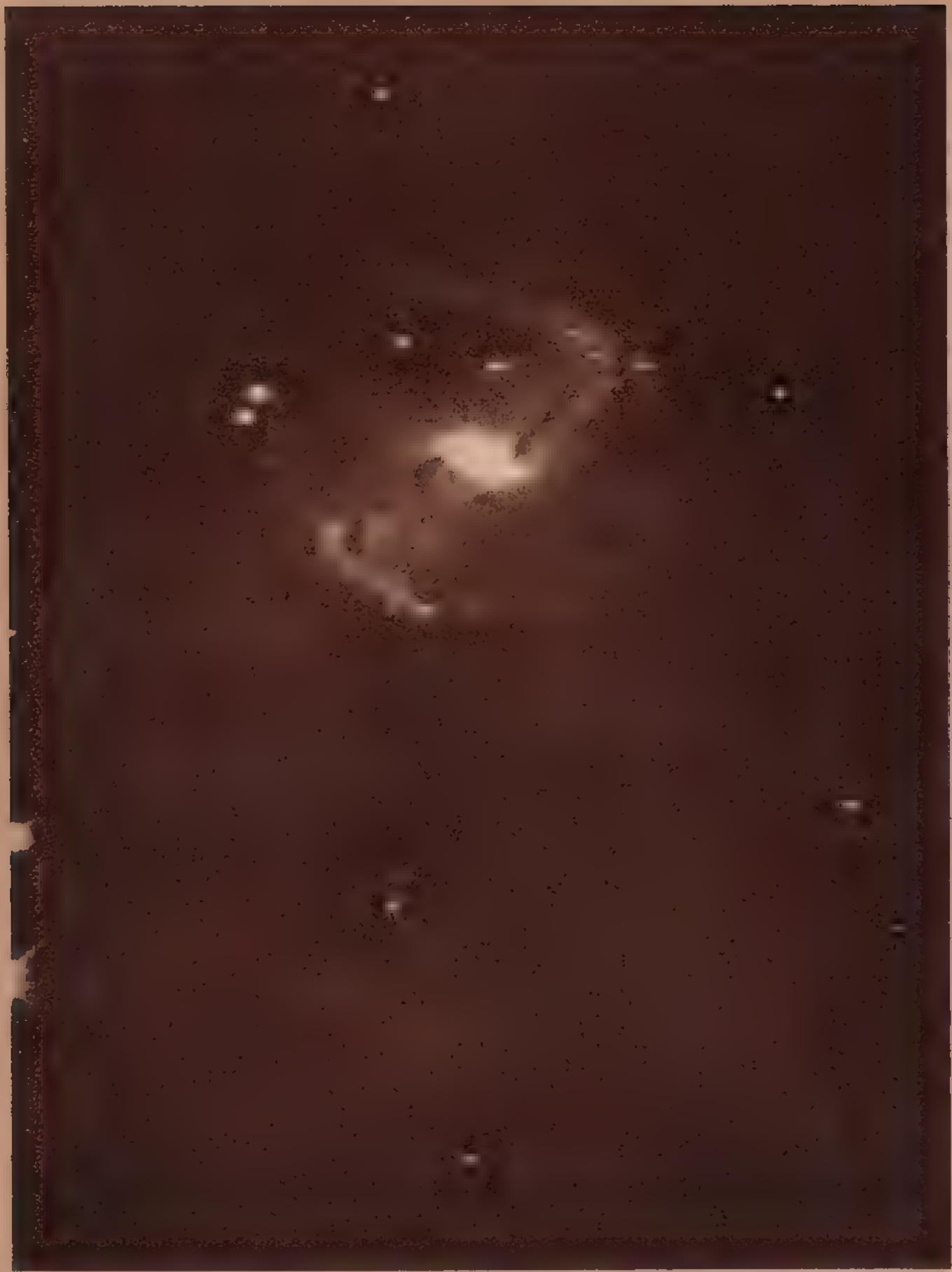
Galaxies of Stars

On the previous page is a still shot from a moving picture of the twin spiral nebulae N.G.C. 4567 and 4568. The next frame of this moving picture can be snapped in another ten thousand years or, so; the last one we missed, since man hadn't yet invented photography—or civilization, for that matter. The motion is violent, enormously rapid, but on a scale that makes miles-a-second speed imperceptible.

You may remember that E. E. Smith, in one of his Lensmen stories, suggested that there was a large number of solar systems in our galaxy because this stellar universe had been penetrated by and in turn had penetrated, another galaxy, resulting in a temporary condition of far greater probability of near stellar passages. We don't know how a universe gets started, how old the universe is, nor how a solar system is created—but this photograph might be interpreted a lot of ways. Perhaps two nebulae about to interpenetrate—sometime during the next billion years. Perhaps two galaxies formed, a few billion years ago, from one stupendous cloud of gas. Or, perhaps, two nebulae that lie in almost the same line of sight, but actually hundreds of thousands of light-years apart on that line. The latter seems rather improbable: the clouds of "gas"—clouds of suns in fact—at the edges seems to be truly blended.

The picture on page 101 shows a group of galaxies lying near together in the sky. And rather near us, for that matter—only seven and three-quarters hours exposure with the 60-inch telescope were needed to catch them. At the furthest, absolute limit of the 100-inch telescope's reach, where the stars are beginning to thin out, the far distant spiral nebulae, the barely attainable ones, begin to show up. We can't use spectrum analysis on them; there isn't light enough. We can't measure their distance. But at those reaches, the number of nebulae in one field of the sky is *greater* than the number of stars in the same solid angle. And each spiral nebula is, of course, a whole galaxy of suns.

And there's a lot to study. Those twin nebulae on Page 99 are typical, ordinary spiral type. The lower of the three on Page 101 is much the same. But that on Page 102—N.G.C. 5383, *Canes Venatici*—is a barred spiral, consisting of a tightly packed central mass, with two fainter arms extending in opposite directions, ending in curving, oppositely pointing branches. The ordinary spiral can be evolved from a uniform gas cloud in orderly mathematical procedure. But the barred nebula, it has been claimed, can result only from a catastrophic interference with the normal spiral evolution. In other words, an explosion. The explosion of a star that blasts matter in masses greater than any planet of our system millions of miles into space, that floods all space with violent radiant energy, is beyond human conception. That involves forces so supernally violent that atomic explosions can be inverted—chemical explosions



would have a cooling, soothing, retarding effect.

If barred nebulae result from *galactic* explosions—wonder what sort of forces that involves . . . ?

On page 103 is a neat classroom demonstration Nature has set up. They are N.G.C. 4647 and 4649, in *Virgo*. On the left we have an extragalactic spiral nebula, standard spiral model. On the right, almost on the same line of sight, but enormously closer, is a globular nebula here in our own galaxy. The featureless blob of brilliantly lighted gas—the exposure was only one and a quarter hours with the 100-inch telescope—contrasts sharply with the wealth of detail in the galaxy of suns far behind it.

On page 104 is another type of nebula with lots of detail—the irregular nebula N.G.C. 7635, *Cassiopeia*. This quite clearly consists of suns shining in and through vast clouds of dust and gas in the region of our galaxy in which they lie. The brilliant spot at the lower left is a brighter star that has, in the course of the three-hour exposure with the 60-inch telescope, practically burned a hole through the photographic plate.

That may, of course, be the sort of thing that A. E. van Vogt was talking about in his story "Storm" —one of the vast winds-between-the-stars. There seems to be a suggestion of wind streaming away from the center of the page and around the nebulous stars at the right. On the original print, the misty area appears to extend from a rough line one third of the way down from the top all across the rest of the area, strongest toward the left of the print.

Actually, such dust and gas masses as these would be considered not a "storm" area, but a sort of cosmic mudbank—not the open sea of space to be crossed at more-than-light speeds, nor solid matter and atmosphere of planets, the dry land of space. Stars situated deep in such dense gas clouds as these would be almost unreachable—and almost inescapable!—because of the hundreds of light-years of "dense" atmosphere to be penetrated.

The most stupendous features of interstellar space cannot be photographed in the normal sense. The all-pervasive "atmosphere" of a galaxy, perhaps part of the reason for the haziness of extragalactic nebulae, is a gas cloud so tenuous that only the spectrograph reveals it. Light must penetrate it for thousands and tens of thousands of light-years before it is appreciably affected. The spectrograph has revealed these vastly tenuous, vastly extensive clouds—and, more, has shown that they do blow as winds on a galactic scale, a "gust" of that tenuous wind blowing for a period of centuries or millennia at velocities measured in miles per second, perhaps, before the far-reaching gravitational, electrical and magnetic forces of a stream of stars changes it. Or before the still more tenuous "wind" of light-pressure streaming out from all the stars alters it.

Extra-Solar Planets

by R. S. RICHARDSON

***Discovery** of three Flash! now four—extra-solar planets required complete revision of all theories of planetary formations. How were planets made?*

Photographs from the Mount Wilson Observatory

Dr. Knox-Shaw. "It will be necessary to find a name for this new theory of the origin of the solar system. I suggest that it be called the 'enticement' theory." (Laughter.)

From the *Proceedings of the Royal Astronomical Society*
Wednesday, April 8, 1936.

As the eighteenth century drew to a close astronomers leaned back, folded their hands complacently over their stomachs, and surveyed the universe with smug satisfaction.

The slate had been wiped clean.

No more problems were left to solve.

Everything was all figured out.

Probably never before or since has any science been in such a perfect state of complete explanation. To crown the triumph the great Pierre Simon Laplace had just come through with a swell hypothesis for the origin of the solar system. Now, in addition to being able to tell where the planets would be in the future, astronomers also knew where they had been in the remote past.

Today, so far as our knowledge of the origin of the planets goes, astronomy is in the most deplorable state in its stormy history. For the whole camp of cosmologists has just been thrown into confusion worse than occurred among disciples of Laplace when W. H. Pickering discovered little Phoebe revolving around Saturn in the retrograde direction in 1898. Within

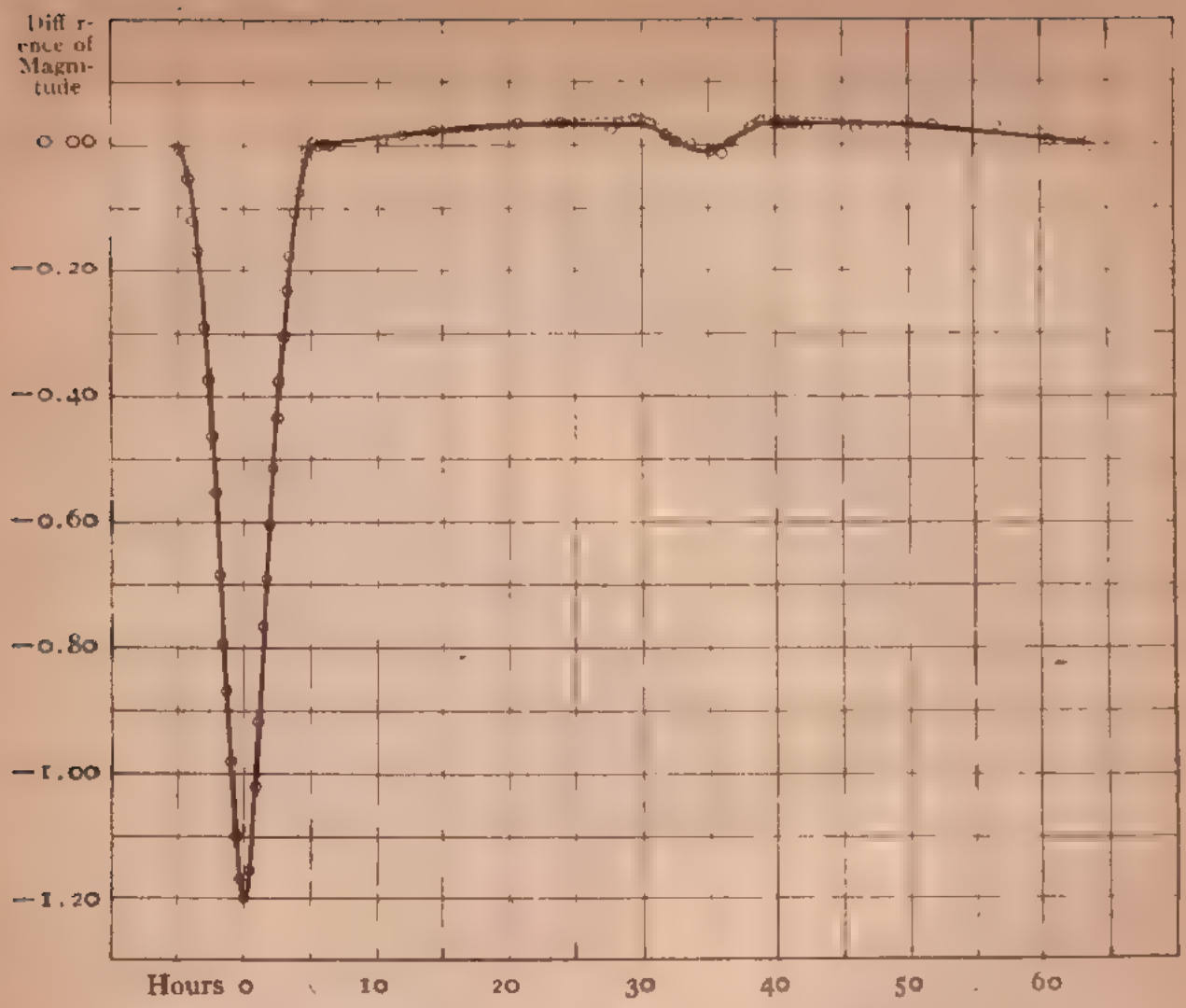


FIG. 1.—Light-curve of Algol. Heavy line, 1920; broken line, 1910

Fig. 1. The plot of brightness-vs.-time of an eclipsing binary—Algol in this case definitely indicates two stars almost in direct contact.

less than a year three nonsolar planets have been discovered in a galaxy where the probability was that but two existed before.

According to current ideas, planetary systems originated at the leisurely rate of one every five thousand million years. If we take the generally accepted "short" time scale for the age of the universe of between one thousand and ten thousand million years, we get at most only two planetary systems in our Milky Way. But now we have direct observational evidence that planets must be rather common attendants of stars.

Details of the discovery of faint companions in the double star systems of 61 Cygni and 70 Ophiuchi were reported in *Astounding* for July, 1943. There it was related how minute sinuosities in the motion of one star around the other had led to the discovery of a small invisible companion. Faint com-

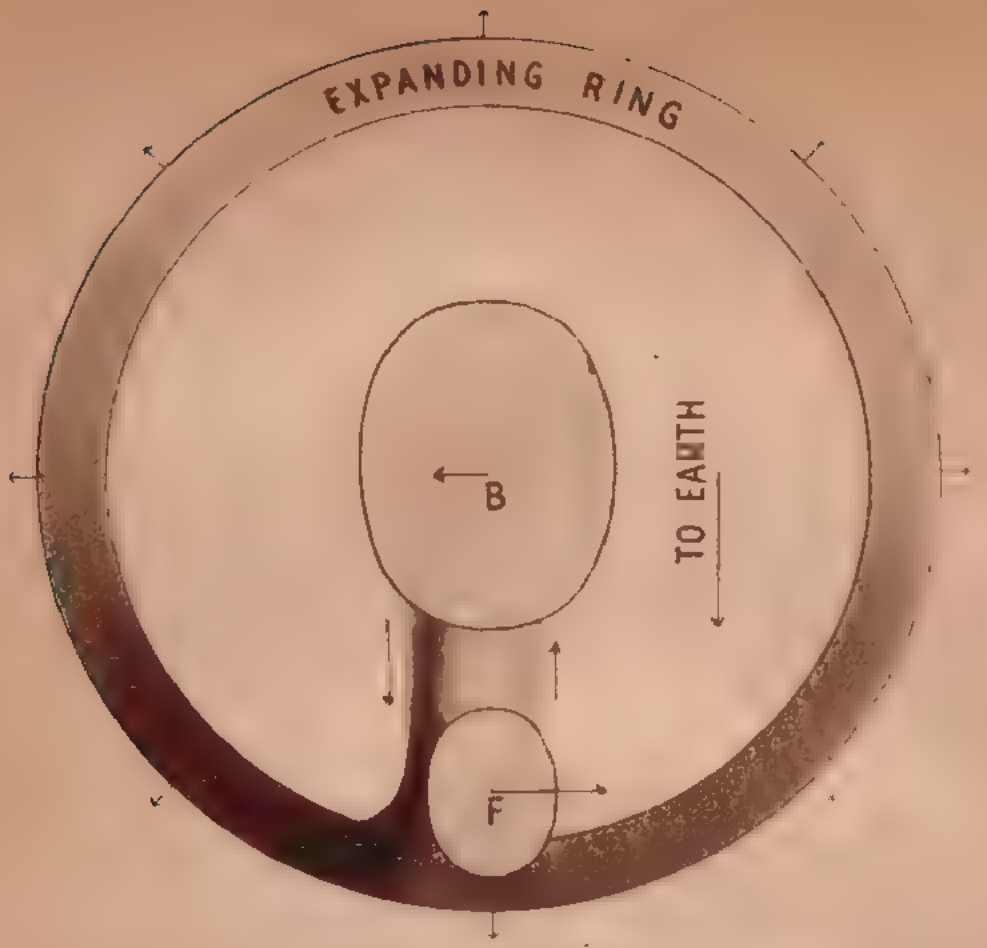


Fig. 2. The system of Beta Lyra, an eclipsing binary of two stars so close they are still connected by a column of gas -amoebae in process of division on a cosmic scale! And the gas moves 500,000 miles an hour.

panions of bright stars were, of course, nothing new. The white dwarf companion of Sirius was uncovered by Bessel nearly a century ago. But always such objects had been so massive that astronomers had no hesitation in pronouncing them stars. Then K. A. Strand in November, 1942, reported the existence of 61 Cygni C with a mass of 0.016 Sun, or one tenth that of the smallest star known. Furthermore, he boldly stated "it must have an intrinsic luminosity so extremely low that we may consider it a planet rather than a star. Thus planetary motion has been found outside the solar system." A few centuries past he would have been promptly burnt at the stake and his papers along with him.

Now, in addition to the two previously announced, another method has yielded a third object of low mass, this time attached to a "single" star known only by its catalogue number of Cincinnati 1244. Cin 1244 is so close to Earth that its proper motion can be readily measured against a background of

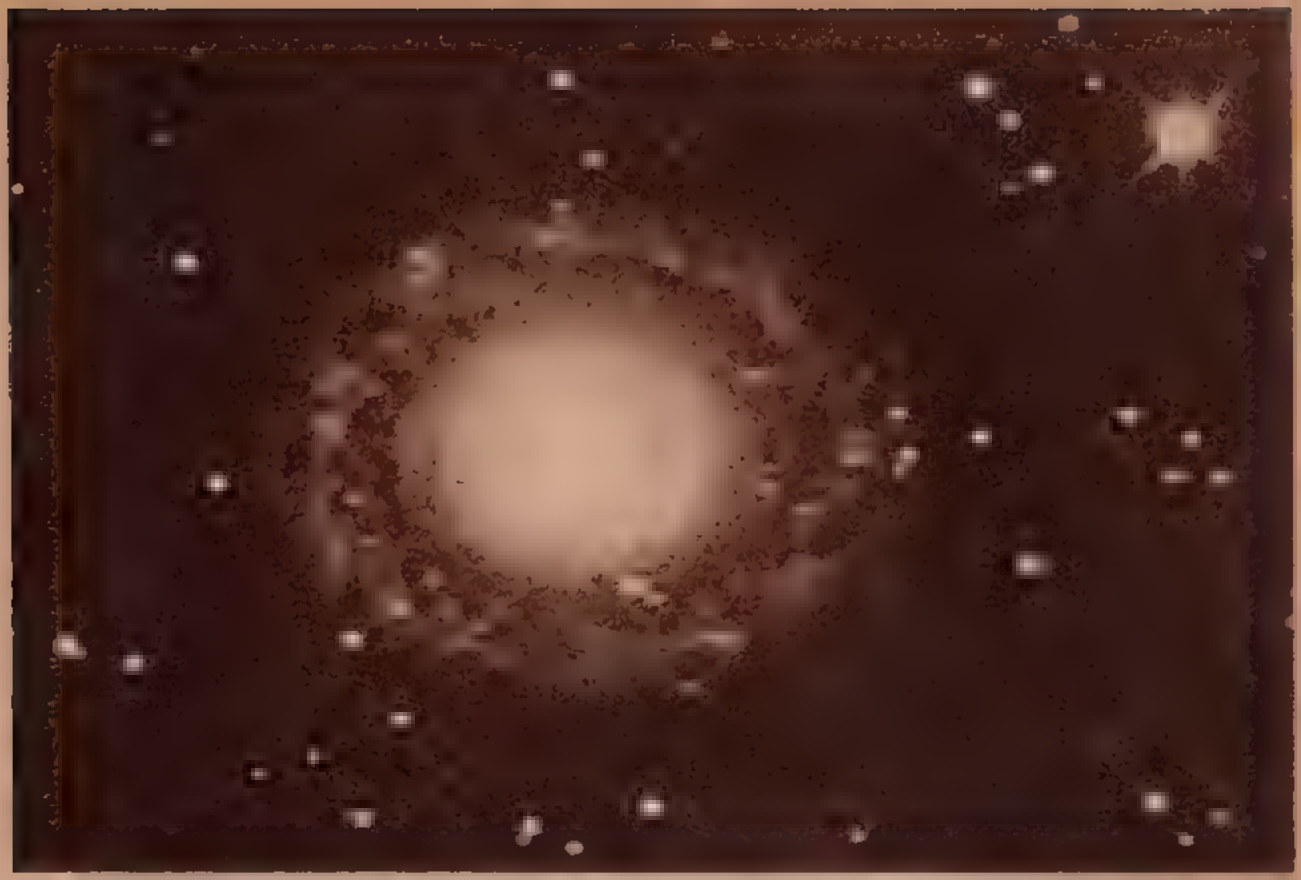
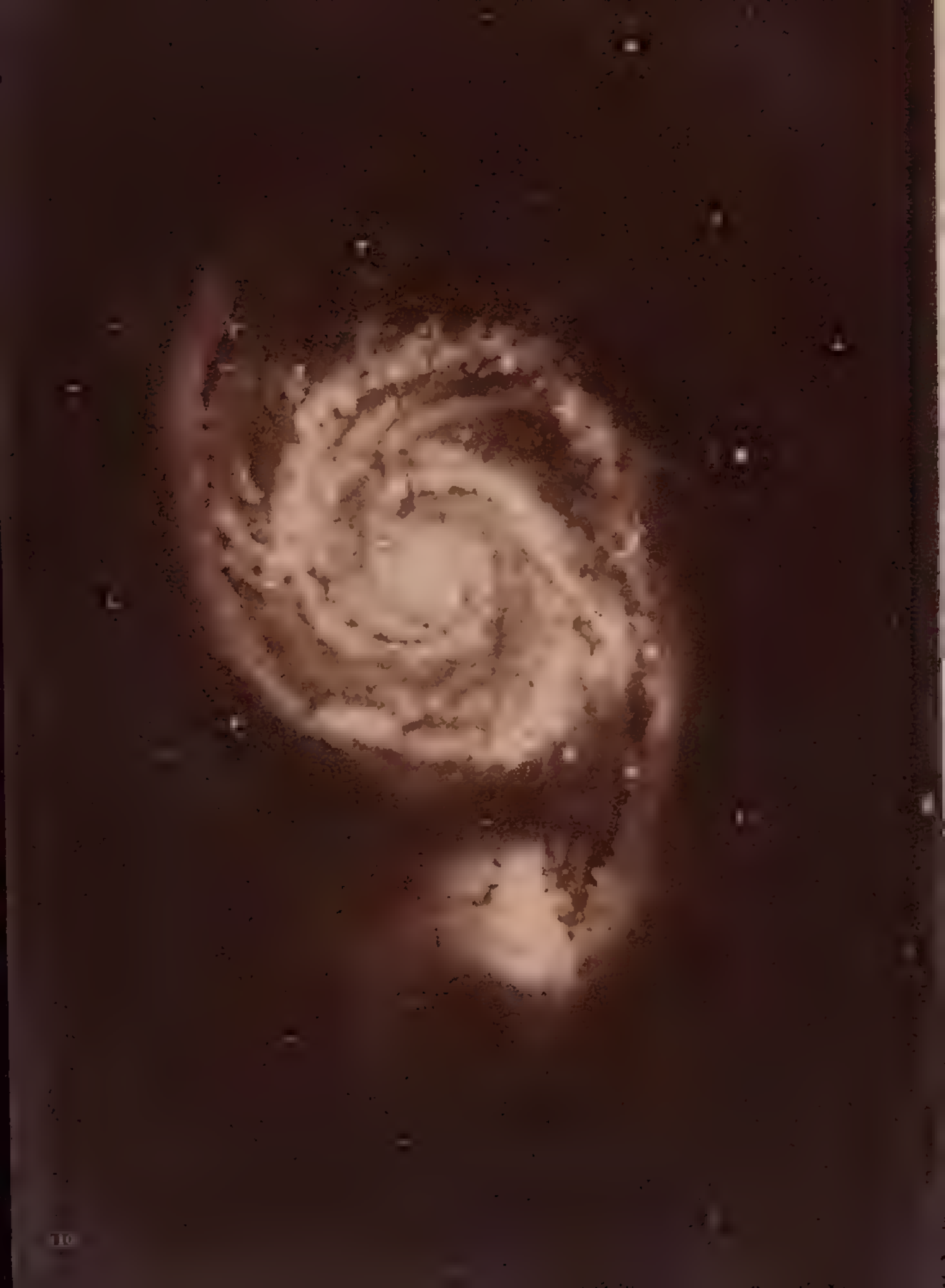


Fig. 3. If astronomers a century ago could have seen this photograph of a ring nebula, they'd have been certain Laplace's theory was proven. But those rings are hot, expanding not cool, contracting—gaseous stuff

much more distant virtually fixed stars. Dr. Reuyl of the Leander McCormack Observatory, one of the co-workers on 70 Ophiuchi, found that from 1915 to 1942 the proper motion of Cin 1244 showed definite variations as if disturbed from its course by an unseen body. His calculations revealed it must be of extremely small mass although larger than the two already known. To summarize, we now have three stars in addition to the sun surrounded by bodies of planetary magnitude, to wit

STAR	MASS	DISTANCE
70 Ophiuchi C. .	10.5 Jupiter	17 light-years
61 Cygni C.	16.8 "	11 " "
Cin 1244 B.	31.4 "	16 " "

Astronomers being naturally conservative both by disposition and training, they did not immediately accept Strand's dictum as to the planetary nature of 61 Cygni C, nor are they yet unanimously agreed upon the matter. When you come to splitting hairs exactly where does a planet end and a star begin? It cannot be bulk alone for many white dwarfs are no bigger than



Uranus and many are doubtless of the dimensions of Earth and Mars. You may say that the surface of a planet is cool and dark, but how cool and how dark? We are aware of enormous ghostly bubbles in space like the dark companion of Epsilon Aurigae that radiates so feebly it is lost in the blinding light of Epsilon A. To chalk up an arbitrary ceiling and say that anything below this mark is a planet and above it a star is not so easy as it sounds.

The question has been to some extent settled by a discussion that began one noon in Pasadena during April of last year. Professor Henry Norris Russell of Princeton University was engaged in research at that time at the offices of the Mount Wilson Observatory. With several other members of the observatory staff he had got into the habit of eating lunch at a small cafe near by. The clientele drawn from the surrounding neighborhood is rather mixed, consisting chiefly of retired middle-western farmers, grammar school teachers, war workers from small defense plants, and the Mount Wilson Observatory. Over the clatter of dishes and orders of roast pork and stewed tomatoes can be heard snatches of conversation pertaining to the best method of irrigating a Victory Garden, who is going to help with the gasoline registration next Monday, the new foreman in the coil winding department, and the latest value for the expansion of the Crab Nebula in Taurus.

Fig. 4. This looks like two stars in near passage, one undergoing tidal disruption to form planets. Proof of the Tidal-Encounter theory? No—it's an entire galaxy, and the "gas" is actually clouds of millions of suns, not mere molecules.

After the cherry jello had been disposed of, someone raised the question of whether 61 Cygni C was a planet or not a planet. Dr. Russell being an authority on the constitution of the heavenly bodies was the natural one to defer the subject. He decided that it all boils down to your definition. If you define a planet as a "compact, opaque body in orbital motion about a sun, and 'shining by reflected light," then the new object is certainly a planet and not a star.

Dr. Russell proceeded to elaborate the conversation in an article for the Astronomical Society for the Pacific in which he derived values for the internal constitution, temperature, dimensions, luminosity, reflected light, and gravitational and nuclear energy of companions of small mass, all in less than three days. After which he made a hurried departure for the East to teach young naval students the first principles of how to navigate a ship.

The announcement of three non-solar planets in rapid succ—

FLASH!!

Harvard College Observatory announces discovery by Dr. G. Van Biesbroeck that comparison of plates taken at prime focus of 82-inch reflector of McDonald Observatory shows BD+4° 4048 has faint companion which shares an-

nual proper motion of primary. Since distance of system is known to be nineteen light-years, absolute brightness of companion can be calculated at once. Found to be sixteen times fainter than Wolf 359, the faintest known. But companion is still six hundred thirty-one times brighter than Jupiter at brightest.

Well, looks as if that might be a fourth nonsolar planet to add to the list. Such an extremely faint object must have a correspondingly low mass. A rough extrapolation from Eddington's Mass-Luminosity curve makes it about the size of Cin 1244.

The announcement of three—now possibly *four*—nonsolar planets in rapid succession has caused the left-wing section of cosmological theorizers to rise up and cry Havoc with great exultation. Those who had already published papers predicting that planetary systems might be more common than generally supposed are loudly proclaiming the fact in letters to the scientific journals. Those whose theories made the solar system practically unique in the galaxy are rushing to the

Fig. 5. And the Sun in this photograph, while it appears to be hurling out a minor planet, is actually ejecting, only temporarily at that, gas so tenuous that its mass wouldn't make a good-sized meteor.

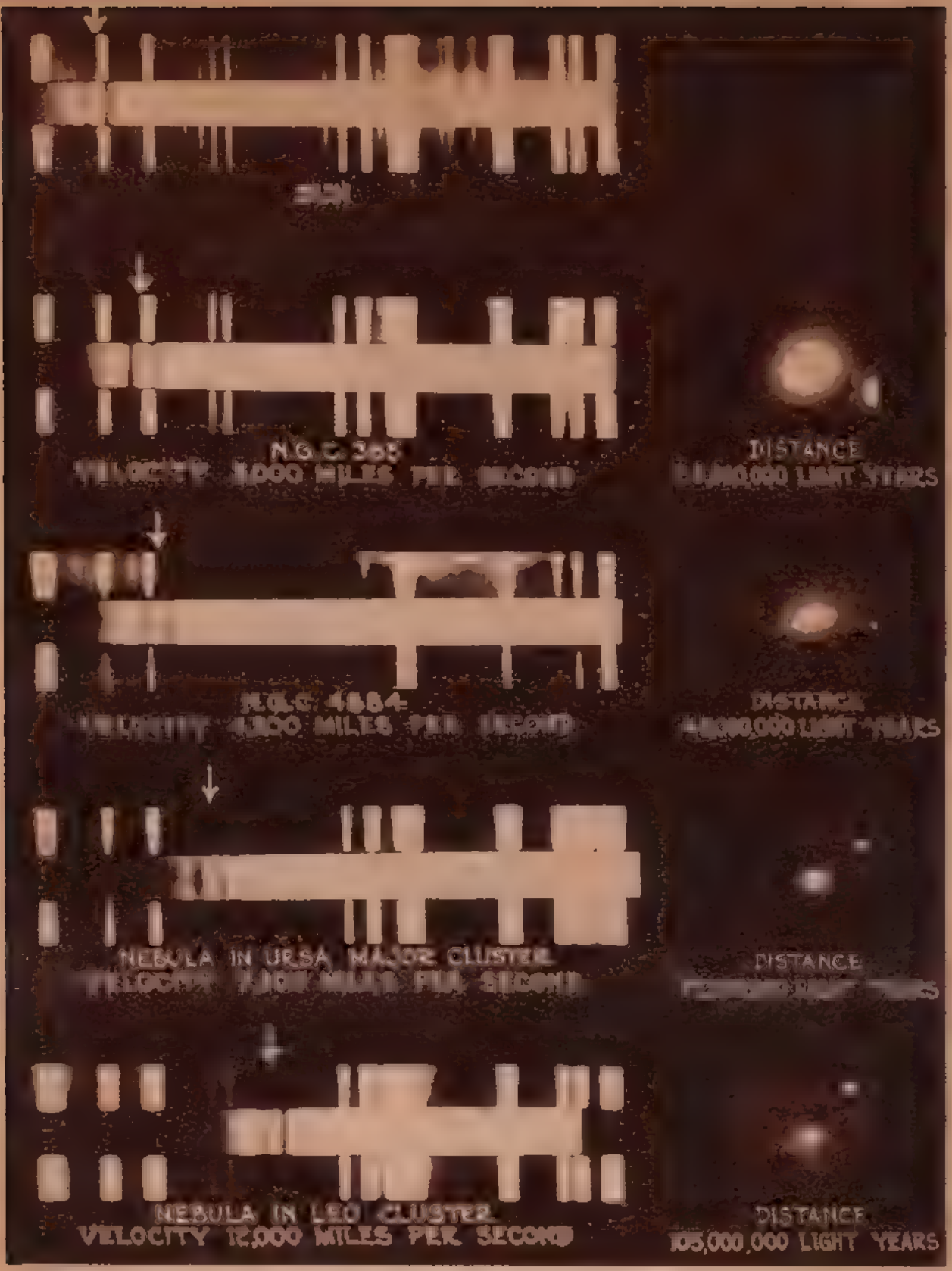


Fig. 6. But there's the spectrum-shift in distant nebulae that seems to show that all the bodies of the universe were far closer together some two billion years ago. If that's so, close star passages could be easy.

rescue with various ways out of the predicament. In addition, several new theories have been proposed which have hardly had time to be carefully examined as yet. One in particular by Professor E. A. Milne of Oxford University is an eerie creation, wherein observers see the world through two different kinds of time, and not only planets and stars but galaxies and meta-galaxies are shrouded within the folds of its stupendous generalizations. Eventually something big will emerge from all the present turmoil and contradiction. Perhaps we should pause and take stock of the situation in a universe where birth control for planets now seems definitely a thing of the past.

Before proceeding I would like to call the reader's attention to the remarkable parallelism between methods of reproduction in the animal kingdom and the theories to account for the birth of stars and planets. While outlining the first rough draft of this article I was continually aware of that sensation of Having Been There Before the mystery boys are so fond of writing about. It seemed to me that somewhere I had met with the same ideas in another connection. Suddenly it dawned. Subconsciously I was comparing them with fragmentary recollections of a Freshman course in college biology. The parallelism is so striking it gives you pause to wonder: is reproduction as we know it upon Earth possibly fundamental in the scheme of creation applicable throughout the universe to the animate and inanimate alike?

A case of reproduction among stars which is practically identical in external features with biological reproduction occurs in the eclipsing binaries. These are double-star systems in which the two components eclipse each other at regular intervals of a few days or hours. Although no telescope can resolve the pair or even show it elongated yet there can be no doubt as to their real nature. Not only does the light vary exactly as if a faint and bright star were alternately in eclipse, but the spectral lines shift from violet to red showing the stars are advancing and receding from Earth. Occasionally two sets of lines, one much weaker than the other, can be discerned shifting in opposite directions. The changes in brightness correspond perfectly with the supposition of two stars revolving around each other in our line of sight. (Fig. 1)

When the dimensions of these eclipsing systems are computed, the size of the orbit comes out so small, compared with the size of the stars themselves, it is evident they must be nearly in contact. Through constant repetition we have become so thoroughly conditioned to the notion that stars are all at enormous distances apart we cannot conceive of it otherwise. But don't ever let anyone trip you up on this one. For eclipsing variables are examples of stars so close together you could almost stand on one and touch the other. In fact, there is convincing evidence that many rapidly eclipsing pairs are not even separated but are

still attached to each other by a narrow cord. In other words, they are still in the process of *fission.* Great luminous dumbbells spinning in the depths of space faster than Earth rotates on its axis!

Now reproduction by fission or the simple process of dividing in half is the method most commonly used by the one-celled animals or protozoa. Thus the slipper animalcule named paramecium reproduces about once every twenty-four hours by splitting into approximately equal parts each of which grows and regenerates whatever organs are missing afterward. Where the original parent was before two new individuals have taken its place and pursue their separate existence. Here the analogy with the eclipsing binaries ends for after fission they are still connected by the invisible bond of gravitation.

A spectacular eclipsing binary that has long been under investigation is Beta Lyra (Fig. 2). It consists of two egg-shaped stars nearly touching with the space between filled with fiery gas. The larger star (B) is hot and blue; the smaller one (F) is cooler and yellower. In such a system it has been proven that a stream of gas must pour from the hot star to the cooler. With a speed of half a million miles an hour it bridges the gap between, sweeps past the smaller star, and spirals outward as a gigantic pinwheel of glowing red and yellow, the characteristic colors of hydrogen and helium. This rapidly rotating and expanding spiral pinwheel forms a gaseous nebula surrounding both stars out to a distance as large as our whole solar system. (Not to be confused with the Ring Nebula in Lyra close to Beta.)

Although no star has ever been actually observed in the process of fission, the supposition that many binaries were formed in this way seems eminently reasonable. But when we come to consider the reproduction of planets out of a chaotic mass of nebula such as Laplace envisaged we are of necessity guessing again. Although discarded his hypothesis is worth considering because it may be taken as representing a slightly higher type of reproduction than by fission.

By 1900 the Nebular Hypothesis was beginning to exhibit distinct signs of senility. Just as the faithful are now springing up to defend the two-planets-per-galaxy theories, so also there were numerous attempts to rejuvenate the Nebular Hypothesis with obedient captured asteroids that explained the retrograde motion of Phoebe and the excessively rapid revolution of Phobos around Mars. But the new knowledge was not to be denied. A rising generation of astronomers reverently lowered the Nebular Hypothesis to rest, a curious fossil structure occasionally exhumed for inspection by scholars and paleocosmologists.

Laplace inserted his entire hypothesis into a few pages at the end of a semipopular book on astronomy which he managed to complete without the aid of a single

log e or cos x, an extraordinary bit of self-discipline for a high-powered mathematician. He outlined his ideas somewhat casually, sketching in the main facts with broad strokes without bothering over details and highlights. It bears every indication of being the product of his lighter moments, while relaxing from something serious such as determining the invariable plane of the solar system. Yet this fragment of speculative philosophy was instantly acclaimed and enthusiastically expounded by scientists and laymen, clergymen and non-believers, for more than one hundred years. Laplace's Nebular Hypothesis never made anybody mad. In this respect it was in decided contrast to Darwin's theory of natural selection published a half century later which aroused a storm of wrath that has not petered out to the present day.

For those who have forgotten the principles of the Nebular Hypothesis it will be sufficient to mention that Laplace had the space now occupied by the planets and beyond to be filled with a flat nebulous mass in slow rotation. As the nebula cooled and contracted it rotated more rapidly. Finally came a time when the centrifugal force at the rim equaled gravity so that a ring was detached. By this means a succession of flat concentric rings were sloughed off which gradually gathered themselves into planets in some way not very clearly specified.

The mercy blow that ended the last spasm of the Nebular Hypothesis was the demonstration that by no conceivable process could ninety-eight percent of the angular momentum of the gas be crammed into one percent of its total mass.

Angular momentum is dynamite.

Angular momentum will wreck the most ingeniously constructed solar system unless you keep it under control every step of the way. It is the lurking menace, the arch villain, in anybody's theory of planetary systems. Let us see the reason why.

Imagine a turntable that spins so smoothly friction can be neglected. Ask a small boy of co-operative disposition to stand erect upon it with feet together. Set him in motion with a good hard shove.

The boy now represents an isolated dynamical system containing a definite *quantity of rotation* or angular momentum. So long as the boy remains alone upon the turntable he is powerless to change his situation. If he should decide to change his distribution of mass by raising his arms, his velocity will immediately compensate by a decrease. If he lowers his arms, he will speed up again. In the same way a star or nebula rotates faster as it shrinks. The boy can wave his arms around any way he likes but always his rate of spin will adjust itself to the shift in mass so that the total angular momentum remains the same.

In our small-boy system most of the angular momentum must obviously be in his body. While not moving so rapidly as his outstretched arms yet so much of him

is in his legs, trunk, and head, that they possess fully eighty percent of the total angular momentum. In the solar system the sun corresponds to the boy's body and the planets to his extended arms, the hands in particular.

But suppose you were informed contrary to all expectations that careful measurements showed fifty percent of the total angular momentum was concentrated in the boy's left hand *alone*. Naturally you would not believe it. For so much angular momentum to be found in so small a part of the system as the boy's left hand is ridiculous. The only way you can imagine it happening is for some person to *put* it there—by handing him a heavy dumbbell at the same time giving him a push. In no other way except the intervention of an *external body* could we get the natural orderly distribution so weirdly upset.

This was the conclusion cosmologists were forced to accept for the solar system. Something from outside—a rapidly moving star—must have brushed past the sun and *put* the angular momentum into the planets that they now possess in such large amounts.

As a device for spawning planets, Laplace's huge sprawling nebula, contracting and detaching rings, which in turn contracted and detached smaller satellite rings, reminds us of some low organism containing within itself the necessary mechanism of reproduction. We might compare it with a marine animal like Hydra which reproduces by external budding. The body wall is pushed out and then gradually pinched off. The bud may develop organs similar to those of its parent and in some species, to carry the analogy farther, may remain attached to the parent.

Only the lowest members of the animal kingdom reproduce by the asexual processes of fission and budding. Going upward in the scale of evolution we soon find reproduction occurring almost universally by the more complex sexual method. Evidently if we intend to make progress in planetary production we must adopt the plan of bringing two or possibly three bodies together in violent reaction. And as might be anticipated things get more complicated right away.

Several theories have been advanced based upon injecting angular momentum into the system by a close approach between the sun and an intruder star sweeping in from outer space in a hyperbolic orbit. It must come at least as close as a couple of million miles otherwise nothing much will happen at all. The sun would merely bulge a little on the sides turned toward and away from the star and afterward go on radiating about the same as before. To swell the tidal bulge Moulton and Chamberlain in their planetesimal hypothesis assumed that eruptive forces within the sun would aid tidal action in expelling matter outward. Jeans depended upon tidal action alone to eject a filament in the direction of the intruder. Later Jeffreys decided a close approach was merely temporizing and postulated an actual col-

lision with the outer shells of the sun and star intermingled for several hours. As they drew apart a long ribbon of inner star stuff would be sheared off—embryonic planetary material from the product of the union.

A word of warning in appraising a theory of solar or stellar evolution. There are a variety of fantastic looking pinwheels, gaseous smears, and sugar-covered doughnuts in the heavens some of which can always be cited in support of a theory. Now it is quite natural for cosmologists to do this. It would be a poor sort of theory indeed that could not produce a single witness in its behalf. The danger lies in seizing upon any and every object that can be made to fit into a scheme of creation regardless of whether we have the vaguest knowledge concerning its true character or not. A cosmologist soon becomes like the doctor who diagnoses every patient's ailment in terms of his own particular specialty.

Thus the planetary nebulae often show beautiful rings around a central star agreeing perfectly with Laplace's contracting discus of gas. If astronomers a century ago could have seen our photographs today, the Nebular Hypothesis would have been considered an established fact. But we know that instead of contracting rings the planetary nebulae really consist of rapidly expanding shells excited to luminosity by the intensely hot class O star at the center (Fig. 3).

There are faintly glowing spirals with arms curling out in opposite directions from a central condensation that bear a striking resemblance to the picture of a star disrupted by tidal forces.. Except that these spirals are not the torn remains of a single torn sun but rather masses of stars closely packed into an island universe (Fig. 4).

We have motion pictures of solar disturbances showing knots of gas hurtling upward from the solar surface in accordance with the notion of eruptive forces aiding tidal action. Figure 5 shows what appears like a nice little asteroid being tossed into space. But the motion pictures also reveal matter raining down upon the sun's. surface like sleet out of a clear sky. And although the solar clouds often look fairly substantial, in reality they are the merest shreds of cosmic ectoplasm insufficient to make even a fair meteorite. The cause of solar eruptions is one of the mysteries of astrophysics, no combination of light pressure, gravitation, or electrostatic force being adequate to account for the anomalous motions they exhibit. In justice to Moulton and Chamberlain, however, it must be conceded that old Sol in his younger days may have heaved more violently than at present.

Now that we have got angular momentum into the solar system by deliberately putting it there, one might suppose that this difficulty could be forgotten. There is ample total angular momentum in the system and the excessive amount

possessed by the planets is explained. Then some alert individual discovered that there was not enough angular momentum *per ton* of planetary debris. Exerting itself to the utmost a star could contribute only 0.25 units of angular momentum per ton. But the planets on the average have 2.53 units of angular momentum per ton or ten times more than we can possibly get out of a star. To overcome the difficulty a star would needs possess extra-sensory powers for perceiving exactly what to do at exactly the right time. Once again angular momentum blasts a superbly designed solar system.

Our position is like that of the detective in a locked room mystery who finds every avenue into the death chamber blocked tight. By no conceivable means could a three-dimensional being have perpetrated the crime. Yet there lies the corpse of the eccentric old millionaire with an ax buried in his skull, tangible evidence that somebody found the secret entrance that is probably staring them in the face if they could only see it. Similarly in the solar system we know the planets must have originated in some way for we are daily confronted by the fact of their existence. Then in 1934 Russell got a clue that for a moment looked as if it might lead to the long-sought hidden passage.

He started with our system not as a single star but as a binary consisting of the sun and a small companion revolving at roughly the distance of the major planets. The

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Why?

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DOC SAVAGE

AT ALL NEWSSTANDS

intruder was to sweep in as before and hit—not the sun, which was to go unscathed—but its little companion. Of course, such a collision is just as improbable as one with the sun, but if we have to have a collision we might as well conjure up the one that will do us the most good. The advantage of using the companion as bait, so to speak, is that we are sure of getting all the angular momentum either total or per ton we are likely to need. The companion had plenty of it before the collision and its scattered remains would have plenty left afterwards.

But solving one difficulty only raised others equally formidable. Perhaps the complications involved can best be shown by having the actors run through their parts from the beginning. We start with a happy domestic scene. The little companion is revolving faithfully around Sol in an elliptic orbit of moderate eccentricity. Both are glowing brightly in complete radiative equilibrium.

Now sound of cosmic thunder as the intruder star enters from outer space moving in an hyperbola at terrific speed. He makes straight for the companion. She is at first faintly attracted, strangely disturbed, then greatly agitated, finally utterly swept away as the two meet in a fiery embrace. Within a few hours the two are fleeing from the sun leaving behind a long ribbon of flame—the illegitimate offspring of the whirlwind romance.

That was the way the script read but trying to play it that way was something else again. Dramatists tell us that the hardest part about writing a play is getting your characters on and off the stage. Here the awkward part arose in trying to get the companion and intruder out of the way not temporarily but for all time. The companion originally is moving in a low-speed elliptic orbit. The intruder is moving in a high-speed hyperbolic orbit. But after collision *both* must be moving in hyperbolic orbits in order to escape from the sun. But undoubtedly much of their original motion will be transformed into heat and be forever lost as velocity. Yet unless they are left moving faster than the velocity of escape from the sun they will haunt the scene of their rendezvous forever—an unthinkable situation.

What is worse, enough debris must be left behind moving elliptically in order to produce the planets else there is no point in having the collision at all. But the shattered fragments would probably not behave so obediently. Instead they would be more likely to accompany the fleeing pair off into space without leaving so much as a belt of asteroids behind for the sun. Russell saw no way out of the triangle and gave it up as unpromising.

Then Lyttleton read Russell's paper and before reaching the end had leaped ahead to a solution. All the script needed was a little rewriting in order to put it over. It could be done if the intruder and companion were to make their exits in nearly opposite directions. As they separated a filament would be left

extending between them which would be thickest in the middle. If the conditions were right, this dense central portion would be moving much more slowly relative to the sun than either intruder or companion, so slowly that instead of accompanying them off into space it would be unable to escape and remain behind to revolve in permanent elliptic orbits.

For a while it looked as if one very special way to produce a solar system had been found at last. It was true that every actor had to be letter perfect in his role and assisted by an expert crew of stagehands and technicians. It all had to click the first time, too. There would be no chance for a retake.

A year later Luyten published a paper in which he seriously questioned whether such a scheme could ever be made to work. He agreed that it was comparatively easy for the intruder to "divorce" the companion from the sun and produce a filament, but his calculations showed the pair would depart taking ninety-four percent of the planetary material along with them. Even the remaining six percent would for the next ten years be nearer the vicinity of the absconding couple than the sun. During this time it would be subject to a pull from opposite directions tending to dissipate the gas instead of allowing it to start condensing into nuclei.

Lyttleton promptly replied to Luyten's attack and for the last six years the two have hammered the matter over in numerous letters to the "Observatory" and "Astrophysical Journal." There would seem to be no way of settling the argument by following the action through step by step for we are up against the old three-body problem again which really is a stonewall.

But even admitting that a substantial filament *was* left behind and the intruder and companion were able to make a clean getaway, reasoning along an entirely different line still makes it extremely doubtful if planets could ever originate in this way. For Lyman Spitzer at Harvard has shown that such a filament, far from condensing into hard planets, would on the contrary behave more like a gas escaping from under terrific pressure. The gas on being released from the interior of the stars at a temperature of the order of a million degrees would immediately proceed to explode, forming an enormously diffuse atmosphere surrounding one of the stars concerned in the collision. Whether a planet could ever get a start out of such unpromising material seems extremely doubtful.

And so, as we remarked in the beginning, the state of cosmology was never so depressing as the one it occupies today. Dr. Harold Jeffreys, speaking at a recent meeting of the Royal Astronomical Society, admirably summed up the situation when he observed that the problem confronting us now is not to look for a nice satisfying theory of the origin of the solar system but rather to explain the anomalous fact that we have a solar system at all! The most promising schemes have al-

ready been tried and found useless. So we are compelled to try the improbable schemes next. But the hard part is to find even one solution of any degree of probability.

Lyttleton's theory has been severely criticized because of the many special conditions it requires. But this is no valid reason for rejecting it alone. As we have had occasion to mention before, that the solar system exists is a fact of observation. The cosmologist's job is to find a set of initial conditions which when turned loose will start functioning according to the known laws of dynamics to grind out a family of planets and satellites. It is like finding a bottle with a ship fully rigged inside. No one would believe it possible unless he saw it there with his own eyes. But a novice at inserting ships into bottles after pondering the matter at length might eventually be able to perform the trick although not by precisely the same method as the original expert. The end result, however, would be the same.

To illustrate the fallacy of rejecting a seemingly fantastic series of events to account for an accomplished fact, suppose that you asked a golfer how his ball happens to be reposing at the bottom of the only gopher hole in sight.

He begins by explaining he really had not intended to play golf at all but had planned to have a tooth pulled that afternoon. But the dentist had been hit by a brick that fell off a window ledge forcing him to cancel the appointment. So since the afternoon was nearly gone he decided to play golf instead. Ordinarily he had no trouble driving over this section of the course but his back muscles were lame from mowing the lawn Sunday; and besides, the golf balls were not so lively on account of the rubber shortage caused by the Japs' treacherous attack on Pearl Harbor. The ball had first hit a tree, glanced off a rock, and then wobbled down the side of the bunker into the gopher hole.

Whereupon you have not the slightest hesitation in pronouncing any man crazy who expects a person to believe that such a series of haphazard incidents could combine to drop a golf ball into the only gopher hole in a ten-acre field.

A theory for the origin of the solar system that appeared just prior to Strand's discovery of 61 Cygni C is of special interest because it definitely predicted that planets might be fairly common objects. The theory was published in 1942 by A. C. Banerji in one of those obscure East Indian journals which so far does not seem to have reached Pasadena. For that reason only secondhand accounts are available.

Banerji starts with the tidal idea with the difference that he makes the sun originally a Cepheid variable in place of a stable dwarf. The regular changes in the light of Cepheids have been attributed to pulsations deep within the star causing the outer layer to rise and fall

like a living and breathing thing. Why a limited range of stars should pulsate in the first place we do not know. Presumably opposing forces are at work such as gravitation and nuclear reactions which alternately attain the upper hand. But if we grant them the privilege of pulsating then most of the observed facts will fit into place very neatly.

There will be times when the force of contraction has shrunk the star down to perhaps ten percent of its average size. Then the force of expansion begins to assert itself, lifting the surface layers up as if it would blow them into space, so that the Cepheid presents a bloated appearance compared with its condition a few days earlier.

Banerji makes the intruder catch the Cepheid in a moment of weakness when it is in a highly unstable state and unable to withstand the disturbing effect of a fast-moving massive "wolf." As in the other tidal hypotheses a filament is ejected from which the planets evolve.

The advantage of using a Cepheid is that the encounter does not have to be nearly so close as for a non-pulsating sun. But the probability of a star passing as close as Pluto is so small that we might as well have a head-on collision and be done with it. And using instability to aid tidal action reminds us of Moulton and Chamberlain's expulsion of material by solar eruptions.

Banerji concluded with these words which in the light of later developments have acquired added significance: "One conclusion seems to be irresistible. If the theory be correct in its essentials, there may be more planetary systems than at present supposed."

Another recent theory which also includes numerous planets as a likely possibility has been advanced by H. Alfven of Stockholm. As in Banerji's case only a few brief reviews are at hand. The theory differs radically from anything previously proposed.

Alfven points out that ionized dust particles at the distance of the planets are much more strongly affected by the sun's general magnetic field than its gravitational attraction. Cold matter falling toward a star would become ionized owing to the increasing temperature. The star's magnetic field would then act to halt the influx of matter and cause it to accumulate at a distance which depends upon the star's mass and the energy of ionization. The inrushing invading particles are assumed to originate from a cloud of gas enveloping the sun out beyond the orbit of Pluto.

Whatever may be the ultimate fate of this theory it is a welcome refresher from the numerous and highly strained tidal encounters.

Professor E. A. Milne's Theory of World-Structure soars above such trivialities as the origin of one little planetary system into such lofty realms as the explanation for the whole expanding universe. Only the bare fundamentals can be indicated here. The investigation which was carried out at the Einstein-

Institut in Potsdam in pre-war days covered ninety-five pages of fine print and mathematical formulae in that popular journal, the *Zeitschrift für Physik.*

Milne emphasizes that the theory is based entirely upon two simple (?) postulates. One is the constancy of the velocity of light, which was Einstein's original assumption in his special theory of relativity. The other asserts that two observers in uniform relative motion have *identical* views of the universe; that is, each one sees the same evolving sequence of world-pictures in his own space and in his own time-scale.

Milne goes on to demonstrate that these two postulates themselves are concerned with the equivalence of observers who base everything upon their consciousness of *time.* (The italics are Milne's.) Results can be derived from the postulates which resemble what we ordinarily speak of as the "laws of dynamics" and "gravitation." They are expressed in terms of the observers' so-called *kinematical time,* which can be transformed into the local Newtonian form of *dynamical time.*

The two kinds of time are especially adapted to the description of certain events in the universe. For example, several lines of evidence—the age of meteorites fixed from their helium content—the proportion of uranium-lead in radioactive minerals—the recurrence of glaciation and the seasonal effect in clays—all point back to a date two billion years ago when a singular mysterious SOMETHING happened to our solar system. Now the moment from which we begin to count our kinematical time can be determined from the red shift of the extragalactic nebulae. It turns out to be 2,000,000,000 B.C.—the same number found from wholly independent sources. But in terms of dynamical time, which would be measured by the revolution of a planet around the sun, the age of the system would be infinite. (No, I don't understand that either.)

The feature about the World-Structure Theory which is of interest in connection with the origin of the solar system, is that it predicts an era in the far-distant past when the laws of nature no longer held good. Thus the perennial stumbling block—angular momentum—in the remote past was not always a fixed invariable quantity as in our spinning boy system but could change with the time.

The implications of such a theory are so far-reaching that if accepted would compel us to abandon most of our present notions of the birth and death of planets. But so far as being of immediate help to us now it is of small benefit.

This much we do know. From now on any theory that does not naturally account for the birth of planets in Rooseveltian numbers is liable to get a cold reception. Apparently there has been hanky-panky going on in the galaxy nobody knew anything about.

THE END.

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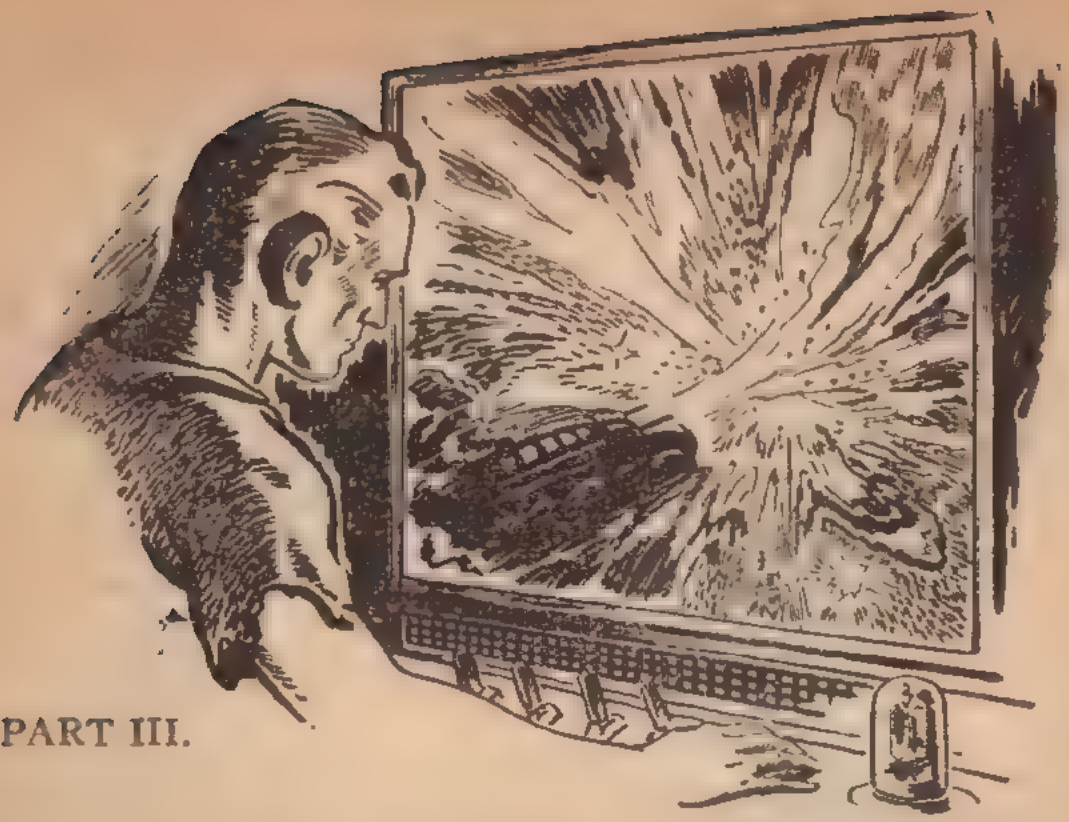


PART III.

Renaissance

by RAYMOND F. JONES

The great plan for Crown World had been woefully twisted, distorted out of use by an unexpected thing. What should have been a world of science, twisted to a superstition-ruled culture.

Illustrated by Orban

SYNOPSIS

Defying law and tradition of Kronweld, Seeker Ketan makes forbidden research into the origin of life. Using animals, he learns the startling facts concerning their reproduction and suspects the existence of parallel circumstances in human reproduction. Kronweld knows only that life is created within the Temple of Birth. Condemned for his blasphemy, Ketan enters the Temple in woman's guise to find out its secrets.

In the same group of entrants is Elta, Ketan's companion to be, who enters for unknown purposes of her own.

Ketan finds the secrets for which

he came in the Chamber of Birth when he witnesses the creation of life. It consists of the sudden appearance of an infant human amid great blinding flames. But through these flames Ketan catches a glimpse of a vast multitude that gives the impression that the flames are no more than a Gateway. Against Elta's violent protest, he determines to enter those flames at the first opportunity.

A schism within the Temple results in the death of Matra, leader of the Ladies, who had previously warned Ketan of some great danger to Kronweld which she identified as the Statists. Dying, she gives Ketan and Elta assistance in planning an escape.

Their plans are thwarted by Anetel, the new leader, however, and Ketan is condemned and forced to pass alone through the flames.

All his life he has held a vision in mind of a great pinnacle of rock in a barren desert which seems to draw him with some mysterious, irresistible force. As he passes through the flames he has the fleeting impression that he is going to that pinnacle.

He regains consciousness in the midst of a strange forest and there makes contact with a group of primitive savages who call themselves the Illegitimates because, as they say, they have no right to live.

Among them he learns that his theories of human creation were correct, which fact comes with a realization that is horrible to his Kronweld-conditioned mind.

He also discovers that his people have come from Earth to Kronweld by means of a machine called the Selector. This machine is controlled now by the ruling group of Earth, the Statists. The machine has for twelve centuries selected out the technically and scientifically endowed intellects and transported the infants possessing them to Kronweld. Ostensibly, the machine's purpose has been to eliminate criminals. Law requires the submission of all new-born to the Selector, but the Illegitimates are those who have fled to the forests and plains and refused to be submitted or to submit their offspring to the machine.

Among the Illegitimates Ketan finds a man who knows of a place similar to the pinnacle and desert of his visions. With his aid, and in company with the leader of the Illegitimates, William Douglas, Ketan locates the pinnacle.

There they find a vast library and museum, and they learn that an ancient scientist, Richard Simons, and his followers, seeing the approach of a great Second Dark Age upon Earth, prepared the Selector to segregate the scientific minds that would be born during the dark era. Coupled into the Selector were other circuits designed to impress the necessity for return to Earth upon one or more brains of sufficient calibre to lead the Kronweldians back to Earth if and when conditions would permit.

Ketan was so impressed, but he was not the first to come back. He learns that many others, under the leadership of Igon, an almost leg-

endary iconoclast of Kronweld, have returned and formed a group to promote the return to Earth. Ketan is directed to contact the group, but he finds no clue to their present existence or whereabouts.

Returning from the pinnacle, he finds the Illegitimate village in commotion over a captured Statist whom they are about to burn at the stake. Their victim is Elta.

Ketan rescues her from the mob. She later confesses to him that she is a Statist, that her purpose and that of Hoult and Daran has been to send back to Earth the scientific discoveries of the Kronweldians. Leechlike, the Statists learned of Kronweld's existence more than two centuries ago and have thus fed upon those segregated intellects ever since. Now, fearing the power of Kronweld, the Statists have formed a plan to wipe out Kronweld as soon as proper atomic weapons are prepared.

Elta reveals that she has revolted against this cruel plan and is going back to the Statist city of Danfer to destroy the Selector thus cutting off the worlds forever. She is adamant and vows to accomplish this, opposing all Ketan's efforts to bring his people back.

Ketan fails to persuade her that Kronweld must return. She says they are not fit to rule Earth as Richard Simons planned because of their conditioning in the alien Kronweld. She believes the Statists would destroy them with ease and considers it an act of mercy to close the Gateway and let them die of their own sterility.

XXI.

Ketan left the house and walked through the village. He saw only a few villagers at a distance and they disappeared at the sight of him.

He walked through the conglomeration of mud and stick dwellings and wandered into the forest. He found a trail that led up and away towards the high peaks beyond the village.

It was like that first day when he had found himself in the forest and forced himself to walk to keep from thinking. As then, he dared not stop to think now. He dared not face the realities that were in his mind. Everything that he knew was right, that he knew he must do, seemed divided off into conflicting, warring segments that had no meaning.

The breeze was light upon his face and the coolness of it chilled him still, for he was not yet accustomed to the cooler air that marked this place from Kronweld.

The treetops fingered the sky above and still gave him a spinning, uncertain feeling when he looked at them long. But their voices were like the voices of gods in his ears. Their music lulled him, and took some of the infinite pain and weariness out of him.

He dared let a sector of his mind dwell on the thought of Elta. And it brought with it a rush of thoughts that mixed in unreasoning turmoil. He could not understand her reaction to the events through which they had passed. Her final threat

to oppose him, bewildered and almost crushed him.

She had the advantage in intimate knowledge of both worlds. She knew the details of life in Danfer. And that knowledge gave her a certain perspective that he wished he had.

But he had other knowledge and other perspectives that were far more valuable. The knowledge gained from the pinnacle storehouse of Richard Simons. If Elta could see that, perhaps she would believe.

The scientists had been giants of their day. It was not a casual thought, their dream of perfection in the world to come. They had planned carefully. He realized that now more than ever. He understood now how every detail had been arranged to impress him with the tremendous scope of his mission and the rightness of it.

He hadn't paid enough attention to the recreated laboratory of Earth's scientists. But its significance had been growing unnoticed in his mind ever since.

He felt the single impression that they had intended to make by showing him that vast laboratory. It was an impression of obligation.

These men are looking down upon you from the ages. The inheritance of all they have hoped and dreamed is yours. You cannot fail them.

When he opened his mind to the words of that thought it was like the impact of a blow. He sat down upon a boulder beneath the trees and listened to the eternal voices of the gods of the winds. They were the same voices that had spoken in the days when the men whose images moved and spoke within the pinnacle were alive. They were voices intoning the commission of the pinnacle, commanding him not to fail, lest the work and the dreams of all that vast laboratory of men should have been in vain.

He sat there long after conviction had come. There was a deep calm within him, as of a man who has sought peace from roaming the universe and at last found its seclusive corner. There was sureness and contentment within him. He knew where he was going. He knew he was right, for he was not alone. A thousand ages of man looked down, commanding, trusting, believing—

He was walking again, on up the hill. The air was sharper and the wind spoke more fiercely as he rose along the steep trail.

He needed Elta. That was the only uncertainty about the entire future. He needed her with all the fierce compulsion that interlaced the lives of companions and companions-to-be.

If he took her to the pinnacle, let her look down upon the ages of Earth's scientists, let the essence of their dreams and visions flow over her as it had him, surely she would be convinced, too.

There was no question of possibility or advisability. It was a command that the men of Kronweld should be brought to their homeland. Surely she would understand that if she went to the pinnacle.

But he knew at the same instant that there was no time for it.

The Statists had the technique for the production of atomic weapons in their possession. Kronweld must be made ready to return before the Statists attacked.

He paused for a moment to look at the sky over the tops of the green spears that were now below him. The great concourse of pointing arms hid all the earth below them, and only far distant hills of red and gold shone above them.

Reluctantly, he started down, trying to memorize all the scene before him. Then something caught his eye, a sound and a speck of motion in the sky.

From below, down beyond the village, a darting plummet soared into the air, flashed silver light for an instant and then was gone. And the soft whine that it put upon the air mingled with the sound of the wind in the trees until he wasn't sure that he had heard anything at all.

Puzzled, he wondered what the darting speck had been, but it was only an idle curiosity. He turned back to wondering what he was going to do with Elta. Could he trust her to the care of the Illegitimates? Would they be sufficiently chastened, or would reaction set in that would demand revenge upon her for his killing among them?

And abruptly he saw that Elta had been right about his feelings concerning the night before. As the thought of the night's horror came to him amid the peace of the forest, a wave of revulsion passed through him, revulsion at his own remembered bestiality, that blunt lust to kill. He fought it out of his mind.

There was turmoil in the village when he came down. He looked about, but no one would meet his glance. They turned away and sought their own doors.

The first person who spoke and rushed towards him was William Douglas.

"Ketan!" he cried. "Where have you been? She's gone!"

"Who's gone? What are you talking about?"

"Elta. She got away in her plane, walked to it in spite of her burned legs. Did she tell you she was going?"

Ketan shook his head. A frightening, hollow feeling rose inside him.

"I've got to get to her," he said. "I've got to catch her somehow before she gets to Danfer. She's going to destroy the Gateway so Kronweld can never come through."

William Douglas paled. "She can't do that! It would mean—failure. We'd never grow out of this—" His eyes swept the squalor of the village.

"But how can we stop her? There's no way to beat her to Danfer."

"If it's true that she is sought by the Statists, she will have to move in hiding from them. That might mean several days before she could carry out her objective."

"What good would that do? You once told me it would take a month

to reach Danfer on horseback."

William Douglas' face was white with desperation. "I'm not thinking of horseback," he said. "Remember that pile of wreckage I showed you once?"

Ketan nodded. "What of it?"

"It's machinery. The kind of machinery the Statists build their flyers out of. There is fuel with it. None of us could possibly understand it—but could you?"

Ketan saw what the Illegitimate meant. Wrecked ships of the Statists. Perhaps there were enough parts from which he could assemble a whole machine. It was fantastic, but not an impossibility. He was very sure the Statists were not capable of building a machine, even with the use of Kronweld's principles, that he could not analyze and understand within a short time.

"Let's go to it," he said in a voice filled with subdued tension.

William Douglas led him to the building where the hopelessly inept Illegitimates worked trying to rediscover and retain some of the technical heritage that had been lost to them. They had failed. For three generations they had failed, because it was not in them to understand more than the simplest of mechanisms. But they plodded their barren pathway relentlessly.

Their clumsiness was incredible to Ketan, but he tried to understand their handicaps and admire what they had done.

They had learned to smelt iron and forge crude tools: hammers, shovels, and other digging tools, but machine tools were utterly beyond them. Even the simplest screw mechanism such as nut and bolt combinations was beyond their capacity to duplicate.

Thus the machines of the Statists which sometimes crashed were like pieces of wizardry to the Illegitimates who examined them after killing the occupants.

They arrived at the pile. There were bent and twisted frames, metal sheeting, complex pieces of driving machinery, all tumbled hopelessly in a pile.

Ketan's heart sank. There was nothing here. Nothing that would ever move by self-propulsion again. There was not enough whole parts to enable him to discover just how the Statists had made the machines travel through the air.

"It's no good," he said to William Douglas. "There's nothing here that we could possibly use." He turned away. "Horseback is the only way."

"She'll be weeks ahead of us, and the Statists will already be carrying out their attack if she fails. There must be a way out!"

They left the piled wreckage and went back to the main road between the huts. The sun was high in the shining sky and the villagers were timidly beginning to come and stare at Ketan. He looked upon them in sudden pity for their ignorance, for the terror and the futility of their lives.

Then he heard himself saying to William Douglas as if words were being put into his mind, "There is a way. Think! Where are there such machines as we need? Far

better perhaps than the Statists have."

William Douglas stared at him a moment, then comprehension came. "The pinnacle!"

The trail had lengthened by a thousand times since they first had traversed it. Retracing the pathway beneath the green arch of the forest was a venture into eternity. Yet they came out onto the hillside overlooking the bleak desert at the end of the first day as they had the first time.

There were only the two of them with their mounts and their pack horses. They slept only a short time and started again in the darkness of night to cross the still-warm desert. It was only midday when they had reached the gap that led to the Valley of the Winds.

"We were foolish to hurry so much," William Douglas observed. "We can't start through there until morning anyway. Now we have to wait a whole half day."

"Why?"

"You mean—?" William Douglas looked to the far end where the blank gray curtain of drifting sands hung like a veil over the end of the canyon. He turned back to Ketan. "I'm willing if you are."

They ate a short meal and then turned the horses towards the curtain of the winds. They made sure that the pack animals were securely tied. Then they wrapped their own faces in moistened cloths and plunged into it.

It seemed to Ketan like something he had done once before, a thousand years ago, so long did it seem since they had been there. But as they advanced, time melted for him once more and ceased to exist. It was as if all the visions and their journey there and back previously and now this trip were locked in a single eternity of drifting, stinging needles of sand. He had always been doing this. He would do it forever more.

Like some sudden miracle, the blank towering wall of the pinnacle loomed before them at last. But the sun was nearly gone. Its feeble light that trickled through the sand cloud cast no shadow. It left only an eerie grayness that hung like a shroud over the Earth.

"Hurry," said Ketan. "Let's get the opening uncovered again before dark."

The digging went more swiftly this time because they knew their objective. By the time the dimmest of the fading beams of daylight were gone, they had the recess open again and the faint golden glow of the tiny image suffused into the night.

"Careful," warned William Douglas.

Ketan held himself ready, but the sudden sinking of the sand beneath him was still a shock as he lifted the statue from its base. The stone plug withdrew and tumbled him into the rough rock antechamber.

Richard Simons and his daughter were standing there as if they had not moved since the visitors had left days before.

"You are back," said Dorien, her eyes flashing in recognition. Ketan

found it hard to comprehend that she was merely an image of light and shadow.

"We want the most advanced airship that you have," said Ketan. "We want your permission to use it and you will have to give us instructions in its operation."

"Of course," said Richard Simons. "Come with us. You want to go to Igon. The ship is the best way to get there."

William Douglas shook his head in bewilderment. He couldn't comprehend how the figures could make conversational response. And now he was wondering why Richard Simons hadn't suggested they take a ship to Danfer when they were there the first time.

The pair of images led them through the strange garden way where eternal flowers nodded before the breath of never ending breezes, and clouds made their ever new patterns in the sky.

They led up the trail that wound through the woods and into the hills and into the shining marble hall. They wound up endless stairways and escalators that broke into motion with their approach.

The utter timelessness of the place laid a wrap about Ketan and infiltrated into his being until he felt as eternal as the gods, these ethereal, intangible gods who led them up through the channels of the pinnacle. He renewed his spirit in the eternities about him, and swore a solemn oath to all those who had gone before him that he would honor their dreams with reality.

The four of them came suddenly out into an enormous chamber which Ketan did not recall seeing before.

As if in answer to his unspoken question, Richard Simons said, "You did not stay to see it all. This is something that represents the most advanced technique of the ages before darkness came."

He held a hand extended towards a gleaming, pointed cylinder that stood on its blunt end with the tapering nose extending into the shadowy depths of the roof. Narrow plates like fins extended in pairs along a portion of the length on either side, giving it a stabilized, directive appearance.

Its smooth, featureless exterior meant nothing to Ketan. "Will it take me to Danfer?" he asked.

The image of Richard Simons smiled. "It could take you to the moon—if you wanted to go there. A little rebuilding of the interior to accommodate supplies would be required. It will take you anywhere on Earth as it stands. It is fueled and loaded with adequate supplies. Come, let's go in."

The sight was awe inspiring to William Douglas. Though he had lived with the Statists, seen the machines they built and flew, he had never imagined a thing of shining beauty like this. It was a perfectly created body of steel and copper and aluminum, awaiting only a spark to bring it alive. He touched his hand to the side as they approached it.

Richard Simons opened a small door in the base as they came up to the ship. It led immediately to a stairway. They climbed endlessly to the height of a narrow tube that occasionally had tempting passageways branching off to unknown sectors of the ship, but the two guides continued upward.

At last, they opened upon a small room that Ketan knew must be located in the nose. It was a transparent walled room. Located in the exact center were twin chairs and a panel of meaningless dials fixed to each other and mounted on gimbals. A short stepway led up to the seats.

"These are the controls," said Richard Simons. "I will show you how to operate them. You might be interested in knowing that in the final battles of the last war this ship was known as a fighter. It required a crew of twenty men to man it, and fight it; modified it makes an excellent two-man transport."

Ketan and William Douglas mounted the steps and sat in the seats that did not sway despite the seemingly fragile mounting. Richard Simons stood on the ladder. His finger touched a button on the panel. Nothing appeared to happen.

"That circuit is connected to the external power units in the pinnacle," he said. "I just burned away the protective coating that was placed over all parts subject to corrosion when the ship was first deposited here. Now that the coating is gone, sealed lubricants are being automatically fed to all moving parts. In a moment it will be ready."

They waited in silence and after a moment Richard Simons pressed another button and then a second. With the first, a low hum of undetermined origin seemed to pervade the atmosphere. With the second, a portion of the roof over them slid aside and wind-borne sand poured in upon them, pecking at the transparent nose of the ship.

The scientist pointed out to Ketan the simple, semiautomatic controls and explained their operation. "You may go any time," he said. "Do not fail."

He turned and went down to Dorien who had waited below. Ketan and William Douglas watched them go down the narrow companionway; then in a moment the faint clang of the door came to them.

Ketan advanced a control and the ship rose slowly through the hole in the flat mesa top of the pinnacle and soared through the night.

A feeling of awe came over him as they rose above the blanket of sand and air that hid the Earth below and glimpsed the stars above. How easy it would be to just keep going, Ketan thought. The ship would simply rise forever if he let it. He wondered why they had never built such a ship in Kronweld.

But he had little time for such wonder. William Douglas beside him was gasping, "Not so fast! We've got to check on our navigating, too."

Only then did Ketan realize that

he didn't have the slightest idea of where they were going. At the same time his finger had unconsciously advanced the power control until they were hurtling through the atmosphere at terrifying speed, a flight as aimless as his plunge down that long corridor from Kronweld.

"How can we find it?" asked Ketan. "Can you tell?" The magnitude of the problem of navigation bewildered him. In Kronweld it would be possible to see any point of arrival within reason, but in the vast expanse of Earth's surface—

"I don't know. Let me see what direction we've been headed."

Ketan was baffled when William Douglas indicated the compass and explained its operation. In the narrow confines of Kronweld, no such science as navigation or instruments therefor had ever arisen. But its logic was clear and shortly he had leaped ahead of the Illegitimate's crude explanation.

"Can you give me the heading of Danfer with respect to the pinnacle?"

"Yes. It's forty-seven degrees and a distance of four hundred miles. Check your time and velocity and present heading."

Ketan made the necessary calculations mentally and adjusted the controls to the new heading. Silently, the slim projectile speared the night air.

Ketan stared absently at the stars overhead, his thoughts on Elta. "I wonder how she is," he said. "What about the burns?"

"They could give trouble, but I imagine she knows enough to take care of them. The Statists have developed a fairly good art of medicine."

After a time the Illegitimate checked their flight and leaned forward. "We're almost there. Look for a mass of lights— I wonder if that is it way over there on the horizon."

They turned the ship to investigate.

"That's it!" William Douglas exclaimed. "Those lights in the center. They mark the great dome of the citadel of the Director. Within it is the giant Selector."

"I don't think it would be anything but foolish to attempt to take the ship into the city," said Ketan, "or for you to appear there. Let's land somewhere outside and I'll go in alone. If I'm not back in, say, twenty days it will mean that I have failed. It will mean that you must wait for Igon, if he still lives, or try to contact the group he organized."

"No. I'm going with you."

"Didn't you tell me that every entrant into the city must have his brand registered at once? What would they do to you with your artificial brand, which they know already? I'm protected. Mine is natural. I want you to draw me a map of the city. Give me the names of principal locations and acquaint me so that I may pass examination."

"Perhaps—" William Douglas agreed reluctantly. And in his eyes Ketan read the unspoken thoughts. Thoughts that went back to that dim cave by the sandy beached

mountain stream, where a smoking pot of grease lit the space in which a woman and a child died. Deaths for which the Statists were directly responsible. And this was the city of the Statists.

He knew that William Douglas would be utterly useless with the overpowering emotion of that black night crying out for vengeance upon the Statists.

The innate skill in Ketan's slim fingers guided the ship in a hovering, silent arc towards the city. The lights of Danfer were dim, scattered sparks that hung as if suspended in the midst of some vast abyss.

"There is a forested region to the left," said William Douglas. "It is flat, but heavily wooded. I think you will find a safe hiding place there if you can get down into it."

Ketan nodded. "We can try."

He turned the nose of the ship downward towards the indicated sector. Powerful lights were buried in the belly of the ship, but Ketan dared not use them until he was very low. He turned them on for a brief glimpse ahead and jerked the nose sharply upward. His fingers trembled at the sudden sight of towering green spires blocking the pathway through the night.

"That was close," William Douglas said softly. "Better leave the lights on. I don't think there's much danger this far out at this time of night."

Cautiously, Ketan turned the beams ahead again in time to see a tiny clearing. He tipped the nose into the air and let the ship drift forward on its momentum, then he blocked the motion and settled the ship gently on its stern.

The men slipped out of the seats and went through the length of the ship and out into the cool night air. It was cold to Ketan, and he trembled violently with its impact.

"We'll have to wait until morning," he decided. "There's no chance of finding my way out of here tonight."

"Perhaps I should go with you—"

"Someone ought to stay with the ship."

They went back inside and found compartments made up with beds ready as if they were long expected guests. They fell upon them and slept soundly until the glinting sun's rays poured through narrow ports upon them.

After a breakfast of synthetics, they went out into the air that was slowly warming under the sun's rays.

"There is an ancient, abandoned highway not far from here," said William Douglas. "I'll go that far with you and it will lead you on into the city."

Ketan assented and as they walked, William Douglas continued his instructions. "This road will take you in past the airfield. It's about a full day's walk from here to the citadel. Talk to as few people as possible. You will be stopped at the airfield and your brand examined. Say that you have come from the East as your accent will mark you. You will be required to

answer no other questions, so don't be afraid of approaching them. Be sure of yourself and they will not be suspicious.

"When you get to the Selector, you may have a long wait. Get close to the front. You will not be barred. As soon as you see an infant appear on the altar surrounded by electrodes, climb the steps and leap into the flames beside it. You will be through."

He paused at the top of a low rise, then pointed to a distant break in the green of the forest. A broken white strip lay across it.

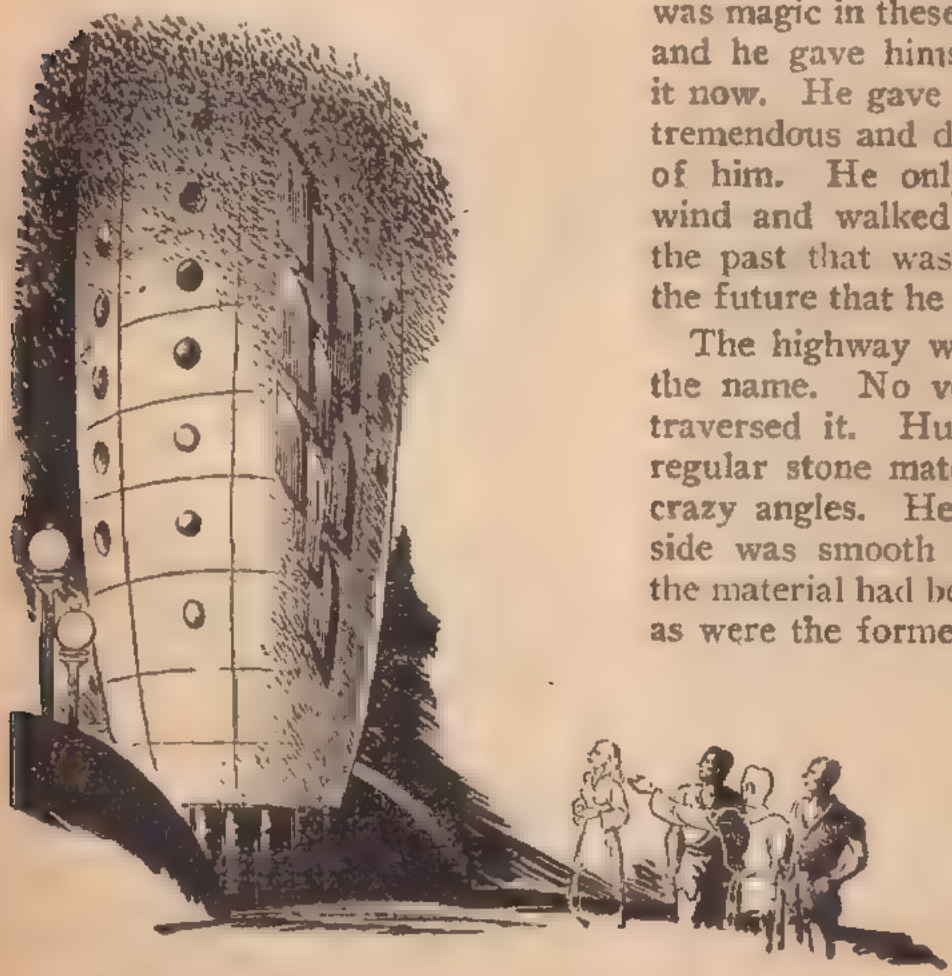
"That's the highway. Hundreds of years ago they say these roads went clear across the continent and thousands of automobiles, as they called them, were driven on the roads. None of the roads are used now."

At the edge of the strip, Ketan paused. He hoisted the pack containing the books from the pinnacle and the food from the ship to his back and touched William Douglas' hand. "Twenty days," he said. "Go back if I'm not here by then."

When he looked back to carefully mark the spot for turning off the highway into the forest, the Illegitimate had disappeared.

Ketan began walking swiftly, subconsciously trying to find a rhythmic beat in the irregular music of the wind through the trees. There was magic in these forests of Earth, and he gave himself up wholly to it now. He gave no thought to the tremendous and difficult task ahead of him. He only listened to the wind and walked and dreamed of the past that was his heritage and the future that he would make of it.

The highway was not worthy of the name. No vehicle could have traversed it. Huge chunks of irregular stone material jutted up at crazy angles. He noticed that one side was smooth and wondered if the material had been poured molten as were the formed roads of Kron-



weld. Trees, small and large, had broken through the material and torn and twisted it aside like slow, careless giants, heedless of the transitory civilization that had formed the once mighty roadway.

The whole Earth was like a Place of Dying. It was not individuals but a nation, a race, a civilization that was dying. Yet before it even ceased its death struggles a new and worthy civilization would be present to replace it, a civilization that was an offshoot of the old, yet purified of all the sickness and foulness that was within tne old.

And somehow, it had come to be his fate to have the rebirth rest upon the success of his endeavor. He could not bear to think long upon that. He brought his mind back from it, and became just Ketan, Seeker of Kronweld, bent upon a certain and interesting quest.

When the sun was no more than overhead he glimpsed the outskirts of the city. The forest was at its very edge, almost overrunning it. He had expected, somehow, to find a bright and shining city of great, smooth roads and cast buildings as in Kronweld, because the Statists had access to all of Kronweld's culture.

But through the depths of the trees on either side of him he could see ruins, great piles of tumbled masonry that were overrun with forest growth. The Statists were barely holding out against the power of the encroaching forest.

Beyond the large clearing of the airfield, which he saw ahead of him, he glimpsed the mysterious, half ruined city. The distant, mighty citadel was visible even from here, and it was the one structure that showed the power and strength of an advancing, building culture.

It was obvious that he would have to appear as having come from the direction of the field. A cluster of buildings at the other side indicated where he would have his brand examined and pass into the city.

He retreated into the forest and left the crumbled remains of the highway. He moved under cover of the foliage to the opposite side of the field. He hesitated a moment before breaking out into the open.

At that moment he heard a whine in the sky, familiar through hearing it once before. He glanced up involuntarily. A shining dot was growing with incredible speed. He watched it drive towards the field and arc up in a long, graceful curve that reached an apex and then dropped the ship gently to earth.

Almost at once, a file of passengers began to emerge from the ship and he moved out of hiding to mingle with them as they passed into the building.

He was apprehensive over his garb, but upon examination of the scene before him all apprehension vanished. An incredible conglomeration of garbs and types of clothing was represented among the travelers.

That meant one thing to him. It meant that transportation and communication were extremely limited even with this mode of travel to

allow such diverse fashions to exist side by side.

The tall, silent ship was standing so that it overshadowed the nearby buildings. The buildings could almost have been transplanted from Kronweld, Ketan thought. The nearest was surrounded by the same type of white fluted columns in rows as used in Kronweldian architecture.

He came towards the building as inconspicuously as possible. Keeping just a little apart, he climbed the short flight of steps with the last of the passengers from the ship.

They passed into a room noisy with the bustle of arrival and greeting. Then he saw that the new arrivals were headed for a counter and were baring their arms for inspection. He hung back to see what the procedure was.

A uniformed man strolled across from the opposite wall and spoke to him. "Step over to the identification counter, please."

It was a mere statement, but it carried to Ketan all the implied force of the Statist world that would destroy without mercy anyone they caught who had not properly passed the test of the Selector.

Ketan moved towards the counter at the end of the line of travelers. He looked at the faces of those about him. He saw none like those of the Illegitimates. He saw no determined defiance. He saw no rebellion. Only a docile acceptance of the routine that represented a thousand years of tyranny.

At last the man ahead of him was baring his arm. Ketan saw a flexible tube with a cup-shaped appendage that fastened for an instant over the man's purple scar. The bored operator of the device nodded and the man moved on.

Ketan bared his arm and the operator applied the tube without even glancing at Ketan. He held it a moment, then nodded perfunctorily without expression upon his bland face.

Ketan started to move away and had reached the end of the counter when the voice of the operator came to him. "Just a moment, please."

He turned back. The man was frowning as if for the first time in many months a thought were running around in his brain. "Just a moment, please," he said again, and it was no request.

XXII.

Ketan stepped back, fearful that somehow he had slipped and betrayed himself. He waited for a tense moment while the operator frowned over some papers on a desk. In a moment he came back to Ketan.

"Please step down the hall and go into the third room on your left. They will be expecting you."

Ketan searched the man's face for an instant, but nothing was expressed there. The former blandness had returned. Ketan wondered what would happen if he refused to obey the order. He decided the results would not be worth the risk of finding out.

But who were *they?* The pronoun had an abnormal significance

the way the stupid-faced operator spoke it.

Ketan turned abruptly and moved in the indicated direction, counting off the doors. He paused before the third on his left, then pushed it open.

Two men were seated beside a desk. In a glance he took in the superior materials and fashion of their dress that marked them as Statists.

Their faces were not more intelligent than that of the operator he had left. There was a quality that he could not name in the gray, cold eyes of the one and the narrow beady ones of the other. If he had been more familiar with Earth ways and expressions, he would have called it cunningness.

They did not speak as he entered. They surveyed him carefully and calmly, taking in the rough cut of the leather garments, the wind and sand roughened skin of his face and hands. They noted with minute examination the deliberately calm eyes he held narrowed beneath his long brow.

He felt that each of them was examining him like some new animal specimen for private reasons of his own. But he took advantage of the moment to return their examining gaze.

The man on the left was short and squat, and his shoulders were so rounded that he had to bend his neck back in order to look ahead. His little eyes looked up beneath the wrinkles on his brow in a way that reminded Ketan of a vicious little animal readying himself to strike.

The other man exhibited contrasting calm, an almost indifferent expression that lurked at the corners of his mouth in a trace of an amused smile. But his glance was no less intent and keen.

It was he who spoke first. "Are you one of Igon's?" he said.

An electric warning struck at Ketan. "I don't know what that means," he answered.

The fat man frowned more and the tall one broadened his smile. "Perhaps not," the latter said. "Perhaps you have not learned of him yet. Nevertheless, you must know that your registration number indicates that you passed through the Selector as a reject. Yet here you are alive on Earth. Can you explain that to the Statists should they ask you?"

"You are not Statists?" Ketan's eyes widened in what he hoped was an expression of surprise. At the same time a sickening, sinking sensation was within him. What fools he and William Douglas had been not to know that they would have his number registered as a reject. If these two were Statists, his position was more than desperate. If they were of Igon's following—how was he to know?

"Where did they tell you to find Igon's headquarters?" the tall one said. "Let us prove who we are by leading you there."

Ketan shook his head. "I know nothing of what you are talking about."

"Perhaps you can tell us where

you left Elta. She would help identify us. You know of her, do you not? And the help she has given Kronweld?"

"I never heard such a name before."

The short, fat man gave a snort of impatience. "This is all nonsense, Javins. All this stupid talk about an organization of Igon's. We all know he was done away with before he had a chance to do anything and that was more than sixty years ago. All of them have said the same thing. Let's get him to the Director and get it over with."

"Very well." The man named Javins sighed in resignation. "I suppose you're right, Bocknor. But it's always worth a try. I still believe that daughter of mine made some contact with them, from the reports we've had from Anetel. I'd give anything to know where she is. Perhaps he can be made to talk."

"Pah! He doesn't know anything! He stumbled through like the rest. We've got more important things to do than this. The last three projector units are ready for test."

Ketan stood motionless as if congealed in a mold. He stared at Javins. Elta the daughter of this sharp-faced, cruel-eyed Statist—!

But part of what they said heartened him. They did not know where Elta was. Did that mean that she had not yet arrived? Or that something had happened to her? At least he wasn't too late to go through the Gateway—if he could escape from the hands of the Statists.

And yet another unlooked for opportunity was here. The Director! William Douglas had told him unbelievable tales of the creature known as the Director, who ruled the Statists with unyielding cruelty. Might it not be worth some delay to encounter the Director and see what the opposition was truly like?

As he stood immobile, thinking, the two arose and came around the desk. Touching him on the arm, Javins and Bocknor drew him along and out the door.

They went down the hall in the opposite direction from which he had previously come and out a door in the side of the building. For a moment, as he passed under the high roof of the portico, he was touched with a sting of nostalgia, for the surroundings were so much like any public place in Kronweld. He found it hard for a moment to realize that he was eons and infinities from Kronweld, that he had no idea of his present position with respect to it.

"Come along." Bocknor gave him a shove towards a small, car-like object at the base of the steps. A glance showed Ketan it was much more crude than the cars of Kronweld. Instead of atomics it appeared to have an internal combustion engine using distilled fuel. It smoked and hummed as the fat Bocknor took the driver's seat and spun the wheel about.

Seated between the two, Ketan had little freedom of movement,

but he craned his neck about as much as possible to get a look at the city.

The great, the fabulous city of the Statists was a thing of ruin and degeneracy.

He found it difficult to comprehend the economy and government that must exist here. The entire picture of Earth's past government and the present rule among the Illegitimates was a confusing mass of indigestible information to his Kronweld-trained mind, but the conditions among the Statists was even more confusing.

The Statists were few, that was certain. But they ruled the vast millions of Earth in a way that Earth had never seen before. By reason of their stolen science, they formed a malignant, intellectual hierarchy.

The result was the conglomerate city of Danfer. Artisans, planners, technicians were too few to build a great new city or to even maintain the old ruined one. They had only managed to slow the decay and to build the citadel that housed the majority of the Statists. In other parts of the world Ketan imagined the conditions must be even more primitive.

Though they had possession of Kronweld's secrets of metallurgy and machinery, they could only administer their technique by slow hand processes.

That would explain the existence of single great flyers like the one he had seen side by side with the ruin in the forest.

Cars like the one in which he rode were few upon the streets. The street itself wound among rubble piles that lay neglected beside dwellings some of which were new in their curious copying of Kronweldian architecture and others of which were simple old buildings patched up with a dozen different styles of design and materials.

Trees lined the streets in haphazard and uncared-for patterns.

The car at last entered the central portion of the city and then Ketan saw the structure that loomed all out of proportion to the rest of the city.

He saw the citadel headquarters of the Statists, the house of the great Selector.

A thin, but steady line of parents was flowing through a high arched opening in the side of the building. Most of them carried an infant to be submitted to the test of the machine. Ketan had difficulty in understanding how there could be such a steady stream provided by a city the size of Danfer.

Then he realized there were those who had come by horse and cart and every other possible means from hundreds of distant towns and villages, besides the ones who lived in the adjacent forests and wild lands. William Douglas had said that some traveled for weeks.

Neither of the Statists had spoken to him since they left the airfield. Now they stopped the car and Bocknor rolled out.

"Quick, now," he growled. "The Director expects you. He will not wait in patience long."

As he stepped out and glanced

up at the vast expanse of the wall of the citadel, Ketan was reminded of the great Edge of Kronweld, except that the wall was gray instead of black. Its expanse blotted out half the sky and the Earth.

He tried to formulate some plan as they led him inside, but none shaped itself in his mind. He didn't know the strength or manner of his opposition. He would have to wait.

In the semidarkness of a large marble chamber the air was cool and music came from some faint source. Kronweld again, Ketan thought.

They crossed the chamber and entered a tube car that closed upon them and rose and darted through a channel that carried them alternately horizontally and vertically. Then it became motionless and they stepped out. They crossed the corridor and entered a wide, ornate door opposite.

The room Ketan saw was vast and there were so many items within it that Ketan thought there was no one there but themselves. He had to refocus his eyes, taking each feature and item of the room one at a time. It was literally filled with apparatus and equipment.

Along the high ceiling ran great racks of cabling interspersed with shield-covered masses of no obvious purpose. On his right, Ketan saw an ebony panel that covered the entire wall. Meters and switches and glass inclosed coils covered its surface. Straight ahead, innumerable banks of tubes glowed and pulsed with blue or yellow light.

It was as he drew his eyes back from this bank of tubes that he saw the other, almost dwarfed object before the mass of equipment.

Its central structure was an elongated glass tube, the size of a man, resting horizontally. Into the tube flowed a mass of cabling some from the racks above, others from nearby banked mechanisms.

Inside the tube was the motionless figure of a man.

Ketan stared and started forward involuntarily.

"Wait until he speaks," Bocknor snarled at Ketan and jerked his shoulder roughly.

"I am quite ready. Let him come forward. The Director speaks."

The voice that filled the room was surging with quiet, suppressed power. It was the voice of a young, sure man who had never known fear.

Slowly, Ketan advanced. He felt a prickle of the short hair on his neck as he came closer and glimpsed more fully the travesty within the tube.

It might have been a man once, Ketan thought. The face was like a piece of wrinkled leather. The mouth was sunken and tightly closed in only a suggestion of an orifice. The top of the head, devoid of hair, was yellow, as if the skin had been partially tanned.

Whether there were eyes or not, Ketan could not tell. Where eyes should have been there were two black, hemispherical cups that rested upon the sockets. They seemed permanently attached to the skin.

"Not an extremely attractive sight," the voice said again.

Ketan realized that those lips had not spoken; they had not spoken for many *tara*. But the voice—it throbbed with life.

Ketan advanced slowly until he jarred abruptly into an invisible wall.

"That is close enough. Protection, you know," the voice said. "I think we can see each other well enough now."

"Who are you?" Ketan finally gasped. "How do—?"

"How do I live? Peculiar, isn't it"—he seemed to be speaking now to the other Statist—"how all these young Seekers from Kronweld ask the same question. You'd think they would be more concerned with their own fate and existence than with mine."

Then, directly to Ketan: "I am always happy to have such solicitous interest, however, because it is your work that makes it possible. By the principles you have worked to uncover, I have been able to replace nearly all of the natural functions of this poor body with mechanisms that more than compensate me for the loss of the original equipment.

"I was blinded many years ago by an accident due to my hastiness in trying to go ahead of knowledge you had furnished us. I was young then and would not be so foolish again. It took the use of my hands and destroyed my legs. But I have managed to exist for a good many years as Director with mechanical substitutes."

Ketan observed that from the cables entering the tube, a network of fine wires went directly to the withered skin of the man's arms and legs and into his throat. It was as if they were fine hairs growing directly upon his flesh.

"You are looking closely?" the Director said. "Yes, those wires go directly to the nerves that are left. Motor impulses are multiplied a hundred thousand million times in those tubes behind me. They, in turn, operate machines that stretch around the world. My voice, too, is merely a mechanical thing controlled by nerve impulses. My own vocal cords atrophied long ago. Food, you see coursing through some of the tubes leading from the machines outside. I am nourished quite well."

Ketan had not noticed the blood-red tubes that he now saw running from the back of the transparent container to nearby pumps and mixers. He felt a return of that old sense of revulsion as he realized the full amount of altering that this human mechanism had undergone. But at the same time he was awed and appalled at the amount of alteration that was possible. Not one in a thousand of those who went to the Place of Dying in Kronweld need die, he thought, if such were the dormant possibilities of their Seeking.

"Well, Bocknor, what shall we do with this one?" The Director's voice was rich with amusement.

"Kill him, of course. He's dangerous."

"He claims no knowledge of Igon

or of Elta or any of the organization?"

"No—of course he's lying."

"I wonder. I wish there were some way to make them confess. We've tried before and never found one who would admit seeing Igon. There must be some mental compulsion impressed upon them in the pinnacle. How I'd love to lock with that great man of yours just once before I die—provided he's still alive."

"Igon is dead," Ketan said.

The voice chuckled. "I'm afraid your persuasion is too weak. Igon and his organization—what is left of it—still exist, perhaps in one of the other planes. We are sure of that, but we don't worry about it much. You see, we have a plan. Would you care to tell him about it, Bocknor? You are in charge of the arrangements."

"No—let's get on. We're wasting time with this," Bocknor snarled unexpectedly.

"Tell him!"

There was a moment's silence in which Ketan could hardly refrain from exclaiming aloud. Here it was—the weakness he had hoped to find. There was schism within the Statist headquarters.

By their very restraint in the face of white-hot emotions, Bocknor and the Director gave away the situation. Ketan knew the fat, stooped man was contending with every fraction of power he could command to wrest control from the half man, half machine that guided the Statists.

"We have atomic power projectors almost finished which will be projected through the Gateway and turn Kronweld into a molten vat," said Bocknor.

"Pleasant fellow, isn't he?" said the Director. "And now can you guess what we are going to do with you? We are going to send you back and watch you try to convince your fellows that you should prepare to fight back. Oh, yes, we . . . that is I . . . can see quite well what transpires in Kronweld. I can see everywhere with my eyes of metal and glass and electrons. They are much better than the old ones.

"So I am going to enjoy immensely the spectacle of you trying to convince them of the existence of Earth. You will have to be careful, you know, because they will probably be quite upset over your disregard for the Temple of Birth. I suggest you work through the Unregistereds. That's quite an organization you have. But be sure to provide me good entertainment until Bocknor gets his projectors ready. I'll enjoy your struggles immensely."

"Don't you think I might succeed?" asked Ketan.

"No. I have not studied Kronweld all these years for nothing. Success is absolutely impossible for you, yet you will go on struggling until the day that Bocknor turns on his beam. That will be the amusing part of it."

"Then why are you so afraid of Kronweld. Why can't you let it live?"

"The pinnacle, you fool, and Igon's group. They'll succeed eventually or would if we didn't cut them off, but you have absolutely no chance of success in the time that is left. If you were another Igon, I might not take a chance, but there is no danger to us in you.

"You came close to some important discoveries, however, I must give you credit. You guessed correctly that the Temple of Birth formed the weakness of your culture in the many superstitions it created. The mysterious appearance of life made a taboo of all investigation into life processes and led to the existence of a whole group of so-called forbidden Mysteries, as you so quaintly called them. Your resulting science had no biology, no bacteriology, no physiology. All chemistry, physics and electronics. It must have been a strange world to live in, but I suppose few of you realized the peculiarity."

"How do you know of these sciences, then?"

"Our history tells us that they once flourished on Earth and we have managed some development of our own. Since they are mostly observational sciences, they require little creative intellect, an admittedly scarce item among us."

"I was right then, and if those superstitions were removed, Kronweld would be far superior to any force you could bring together upon Earth."

"Quite right. And because the trend of your culture is slowly moving in this direction, we have decided that it must be destroyed before it becomes a power that might overthrow us. Do you see?"

Ketan didn't see. His mind failed to grasp an insight into the thought processes of the Director. So alien was the concept of war and conquest to any mind conditioned in Kronweld, that Ketan could not begin to grasp the outline of the desires that motivated such action.

He would have to act blindly as if the Director and the Statists were nothing more than a great, insensitive machine created for the destruction of Kronweld. But there was one clue to the impulses of the Director. It seemed obvious that his injuries had made him feel so much less than other men that he had spent a lifetime endeavoring to be more than any other man and to wield power over all men.

That was the real secret behind his reason for wanting to destroy Kronweld. The Seekers of Kronweld were rivals to his power. Not that there was much danger of them discovering the Gateway and challenging the Statists without the influence of the pinnacle, but their mere existence in an alien plane was a challenge to his powers. The Director's motive was to destroy any superior power anywhere in the universe whether it encroached upon his domain or not.

Ketan felt a chill in the face of such an insatiable lust for power.

"What have you done with the others you captured of those who came through?"

"We haven't kept count of the number," said the Director. "We

killed some of them outright. Some of them are still alive in planes adjacent to Kronweld. I take a look at them once in a while. They are

quite ingenious. One of them is living in a world where space itself is tangible. Quite a curious existence he's leading there.

"But I'm becoming tired now. What's left of this body tires easily. Bocknor and Javins will take care of you now. Have a pleasant journey. Good-by."

As if at a signal, Ketan's arms were grasped roughly by the two Statists and he was spun about and out of the room.

Silently, they went out and down a long, dim corridor where even their footsteps were soundless and muffled. Ketan glanced at his guards.

"I should think you would grow tired of being ruled by that—machine."

Bocknor confirmed Ketan's suspicions about the relationship between himself and the Director. "It won't be for long," he said. "Spend your sympathy on yourself."

His hand suddenly released Ketan's arm and Ketan looked back and up, quickly.

Bocknor's arm was drawn back, with a sharp, pointed knife gleaming in his hand. Ketan dropped to the floor, doubling over, and seized the fat man's leg near the ankle. He jerked hard and twisted at the same time. He felt the knife part the fiber of his leather shirt.

Javins let out a savage bellow of rage and kicked the knife from Bocknor's hand, at the same time

seizing Ketan's arm in a vicious twist as Ketan was about to spring away.

"You fool . . . you fool!" Javins raged. "Why did you try that?"

"He's too dangerous. I want him dead."

"You'll do as the Director says—as long as he's alive."

"He would never know. We'd tell him the prisoner started a fight and we had to kill him."

"Won't you ever learn? Don't you think the Director is looking at us and hearing what we say right now?"

In sudden, overwhelming fear, Bocknor whirled and looked nervously about.

"You can't see him," Javins reminded needlessly, "but he can see *you*. Come on."

They started again. Ketan felt a curious mixture of elation and despair. Elation because it was going to be so easy to return to Kronweld after all. Despair because of the tremendously greater opposition facing him than he had realized before.

The Director had prophesied failure of any attempt to appeal to the people of Kronweld. That was partly in agreement with the argument Elta had used. Ketan had thought it would be so simple once he returned with the story of Earth and Kronweld's heritage. Now he was beginning to be uncertain of himself. The Statists had taken the books and evidences he had hoped to take back. All he would have would be himself and his incredible story. Could he make them believe it?

They would have to believe it. He would make them, somehow.

The corridor ended abruptly. There was a sudden tenseness visible in both the Statists as they approached it, as if they were half fearful of the powers they were about to face.

They paused for a moment at the blank door that barred their progress. Then, with a quick motion, Bocknor flung open the door and they shoved Ketan through. He heard the door lock behind him.

As if staring at a sudden nightmare brought to life, he looked out upon the scene before him. A concourse of staring faces looked up. It was like the brief vision he had had from the niche in the Temple of Birth. They were staring, pleading, with desperate anxiety on their faces. They made no sound, but the hundreds of pairs of eyes were upon him.

He was standing a little above them at the top of a flight of terrace-like steps that ended at the shelflike altar upon which he stood. Below, in the depths under those terraces he could feel the hum and vibration of the power that surged through the machine. He realized that all this vast protuberance of altar and steps and giant, shining electrodes about him was the Selector itself.

The dome of the building threw out a pale light that fell upon the dispirited crowd. Apparently the people had been prepared for some-

thing, for there was pity, too, upon their faces.

All this he caught in a glance that took no more than a fraction of a second before he heard the sound of confusion far to the rear. At the same instant he saw the motion of a fearful backward glance from someone in the front, near the Selector.

Then the figure turned and he stifled a cry.

Elta was there. Her anxious eyes glanced from the altar to the rear of the building and back to Ketan.

She was wearing a long, shrouding cloak that almost hid her from head to foot. One hand was held inside the folds of the cloak and he knew almost before she drew it out what she held in there.

A sudden blast of sound filled the hall and became a voice that thundered, "The judgment of the Director—oblivion!"

At that moment the electrodes on either side began to glow and the scene grew vaporous as if beneath a thickening fog. It swirled crazily, and Ketan realized he had fallen to his knees.

The fog began to glow in spots that gyrated in senseless patterns of light, growing faster and faster in pace until they blurred into streaks. He felt as if a mounting tension within space itself were about to tear him apart.

Then dimly, through the mist and blinding lights, he saw the figure of Elta. The pursuers, who had created the disturbance at the rear, were almost up to her now. She drew her hand out of the cloak and Ketan recognized the form of a Dark Land weapon.

From its nose there crashed a beam of light, and below him there appeared a bright spot of fire that raked across the terraces of the Selector. Sudden thunder of exploding equipment beneath shook the hall. The altar tipped crazily and Ketan cried out Elta's name.

Then the scene was gone and he was again in the cradle of space among the stars, alone with them in the realm where time had stopped forever, yet great suns were born and grew old and vanished in the quick fire of novae, all in an instant.

XXIII.

There was soft music in the night and perfume wafted upon the air. In the black sky above, purple shadows and lights leaped and fluttered, and trembling, elusive pinpoints of starlight showed momentarily.

Ketan lay upon his back, eyes staring up at that familiar but alien sky. Beneath him was a carpet of soft grass, and out of the corner of his eye he saw the gleaming white curve of a huge hemispherical surface that arced up until a curtain of blackness cut it off.

The air was warm and a sharp, familiar pungency came to his nostrils. The winds were blowing in from Fire Land tonight, he thought.

He sat up, sick with the memory of that last instant that he remembered, the vision of Elta spraying the Selector with a flaming knife

that cut into the heart of the eternal machine.

He remembered that last moment of falling terror when he plunged down from the shattered altar towards the pool of flaming metal that marked the path of her beam.

But the Selector had acted an instant before its destruction, he knew. It had opened the Gateway and flung him through, beyond the meaningless eras, and beyond the gaps of space that separated the worlds.

And now that Gateway was closed.

Forever.

Elta had succeeded in her insane scheme of cutting off the worlds from each other, and he had failed in the mighty commission of the pinnacle to bring the worlds together.

There was no purpose in his being in Kronweld now. He may as well have remained in Danfer and perished in the ruins of the Selector.

He tried to force himself not to think of Elta's fate. He knew what it would surely be. He had seen those minions of the Director nearly upon her as she pressed the trigger that flamed the Selector. Even at this moment, they would be bearing her back to the Director and that withered travesty of a human being would pronounce a sentence worse than death upon her. There would be no satisfaction to the Director that Kronweld was cut off and would die of its own sterility. To demonstrate his power, he had to destroy it with his own hand.

The weaving curtains of light flared in the sky for an instant and Ketan caught a half lit picture of all the white city with its columns and towers of shining marble. It was like a scene upon Earth in the light of a red and purple moon.

He wondered if Anetel knew. He looked towards the glistening Temple of Birth from whence the soft music came. He wondered why he had not come into the Chamber of Birth. Probably it was due to the distortion of the Gateway caused by Elta's burning of the Selector.

Probably no indication had come to the Ladies of the Temple of the change that had taken place. They would continue to wait inside the bleak Chamber of Birth, but no more would rejected infants of Earth come to them.

They had been alarmed by the decreasing number that had appeared during the last few *tara*. How great would be their panic as the days lengthened into *tara* now and none at all appeared. Ketan wondered who the last man would be, the last man to live and die in this world of the dead.

But as he lay on the grass with these morbid thoughts filling his mind he knew somehow that they were all wrong. Kronweld could not die so easily. Perhaps some way could be found to overcome the sterility that seized them all. If they could be persuaded to go into Dark Land, there was a chance that like the Bors—

There was a better thought: Why could they not build a machine

that would open the Gateway from this side? If the scientists of Richard Simons' day had been able to create it in the first place, the Seekers of Kronweld should be able to duplicate the machine.

He rose to his feet. His ultimate goal was the same, only one more obstacle had been put in his way, he told himself.

There was just a single moment when he looked into the *tara* to come and thought of Elta. It brought bleakness, unmatched by the darkness and the cold winds of Dark Land. He forced it out of his mind. There was only the present, and that all-important goal to which it would lead.

He walked towards the roadway that circled in front of the Temple. As he neared, he realized his additional predicament. He was behind the purple, lethal line that completely inclosed the Temple and cut it off from the city.

He stood before it, staring down, when he heard a sudden exclamation nearby. He looked up to see a pair of Seekers in the roadway, standing in open-mouthed astonishment.

"How did you get in there?"

Before Ketan could answer, the second man exclaimed, "I know you! You are Ketan who desecrated the Temple. But they said you were dead."

"I'm not, you see."

The uniqueness of the situation inspired him. It *could* be a wedge between the people of Kronweld and their stifling superstitions if he took advantage of it.

"I have been through the Edge into the realm of the God. I have come back to tell you what is there and where we have come from."

They backed in fear at his blasphemy. "The Servicemen will take care of him," the first man whispered hoarsely.

"Yes, tell the Servicemen," said Keten. "Tell all of Kronweld. Tell the people what you have seen and bring them here. Let them see how I am yet unharmed by the wrath of the God whom I have desecrated. Go and tell them I have a message for them."

They turned and ran. Probably they would get the nearest Serviceman, but that didn't matter, he thought. His story must spread, and anyone would do.

The Council and the First Group would still attempt to suppress his message, but the populace were Seekers, men and women who could understand the truth of his words, once their eyes were opened to the falsity of their inhibitions. It was these who must hear him.

He saw the first of the gathering crowd in the streets leading to the Temple. They were led by the two excited and exclaiming Seekers who had found him.

They crept closer. In the vanguard were a half dozen Servicemen, and all came slowly, with a queer sort of awe as if he had come back from the dead.

Ketan stepped back from the line, and the crowd flung questions at him which he left unanswered until

there were too many for his voice to reach. The news was spreading swiftly.

"Seekers of Kronweld!" he cried suddenly. They became silent, their voice of anger dying away in ripples.

"You see me here," he said, "and wonder how I am yet alive after I have crossed the forbidden line and entered the Temple and found the secrets of it.

"Yes, I have been in there. I have seen what takes place. Do you want to know what is there? Do you want to know where we came from?"

He paused, feeling the spontaneous wave of shocks that emanated from the crowd. He waited for someone to speak. But no one spoke. They only continued to stare in horror.

He looked about. He looked into their faces and saw that he had not gained a grip on a single mind.

"I'll tell you whether you want to hear it or not!" he exclaimed. "I'll tell you that you came from beyond the great Edge from a world that is ours by right of heritage. I have been to that world and it wants us back. Long ago, a group of great Seekers prepared the means for us to escape the destruction that came upon our home world and sent us to Kronweld for our own protection. Now, it is time for us to go back and rebuild that world. It is our heritage. It is the only reason for our existence.

"All of you must go where I have been and see for yourselves. But the Gateway is closed now. No new life will appear within the Temple of Birth until we reopen it. We must first reopen the Gateway from this side before we can go through."

He stopped. He looked upon them. He scanned a thousand faces and what he saw there shook him with a terror that he had never before known. In that one instant he recalled the words of the Director: "I have not studied Kronweld all these years for nothing. Success is absolutely impossible for you, yet you will go on struggling until the day Bocknor turns on his beam. That will be the amusing part of it."

He wondered if the Director were watching now, if his mysterious powers could pierce the Edge and enable him to know that Ketan realized what he meant.

As motionless as the golden image of Dorien, behind him, Ketan looked at the assemblage and knew that he had failed. A thousand *tara* ago they had created the myth of the Temple of Birth and now that monstrous creation bound them with chains. Only the stark reality of the Temple's destruction would convince them. That, and a glimpse into the world of Earth. Not words, not any man could accomplish that.

The murmur was rising from them now. They were recovering from the shock of his words. Someone threw a stone. A blast of heat and thunder and a moment's blinding light marked the instant it came above the protecting purple line.

"Blasphemer!"

The cry rose on the outer edge of the mob and traveled inward like a gathering wave. It washed over Ketan and left him sick and weary.

He remembered that other mob, the one in the village of the Illegitimates. This one wanted his blood just as surely as had that first one.

He must show them, he thought dully, through the weariness. Words were not enough. He must get to the Unregistereds, find what had become of them, and carry on his work with them. Even the Director had advised mockingly to do that. That old and withered husk held a mind that knew far more of Kronweld than did he, Ketan admitted bitterly.

He did not quite comprehend the suddenness of the next event—nor did the mob. Then someone shouted, "The line! It's been turned off!"

They came at him then. He ran up the low incline, straining to outdistance the irrational mob. But there was nowhere to go and the pain within him was overwhelming. He turned and faced them and waited until they swept over him.

He was alone that night in a single interior room of his house. In accordance with custom, it had been declared open for occupancy as soon as he was reported dead, but no one would live in the house of Ketan, the blasphemer, and so his things were as he had left them.

In every room that opened from the one he was in there were three Servicemen. Outside, a double line of them patrolled the house.

For hours he sat without moving. His mind was working only in retrospect. As time passed, the realization of the enormity of his mistake grew upon him. How could he have so underestimated the power of the suppression of knowledge through the ages of Kronweld's history? Branen, even, had understood its effect better than he. He had supposed the sudden revelation of truth would crush it. All the rest of the Unregistereds—Elta—the Director—all of them knew what those hundreds of *tara* of superstition had done.

Had Igon, in his eagerness, made the same mistake as he, Ketan wondered?

Somewhere the whole vast dream of Richard Simons had gone wrong. But where?

It centered in the Temple of Birth. The ancient scientists had never anticipated such a growth. They had supposed that life and birth would be normal in Kronweld except for the appearance of those who came through the Edge. Had the ancients been correct the suppression of knowledge of life processes would not have existed. There would have been Seekings in medicine, surgery, biology, bacteriology, physiology, and all that realm of knowledge of whose existence William Douglas had spoken.

But something was present to create sterility in every man and woman who came into Kronweld. This meant that the cream of Earth's intellect had been drained off through the centuries and had not reproduced itself. Slowly, but

inevitably, a reverse evolution of the combined society of Earth and Kronweld had taken place. The handful now living in Kronweld should have been a host of hundreds of thousands of Seekers. The scientists who built the pinnacle had failed because they didn't understand the world into which they plunged their choicest offspring. Ketan had failed because he hadn't understood his own people.

He slept finally and was awakened by a Serviceman who shook him roughly by the shoulder.

"The Council orders your presence," the man said.

"I am ready."

Ready for declassing. Ready to live as an outcast, a pariah among the friends he had known.

When he was dressed, they took him out to a waiting car and sat him between two silent Servicemen, who disdained even a greeting. The short ride ended too quickly for him and he was ushered up the lift of the Control Central and led to the doors of the chamber.

As he neared, he was puzzled by the commotion and the buzzing sound of a multitude of voices. He wondered where they were coming from. Then the chamber doors opened and he gazed in upon the filled hall. The hearing had been declared public. The Council must be sure of themselves, he thought despairingly.

He was led to the space in the semicircular table before the solemn Councilors. In tiered rows on all sides were gathered the two thousand Seekers in attendance.

Ketan turned to the Council. He wondered who was Leader in the place of the dead Hoult. None could be more vicious than the Statist.

Then he had doubts of that judgment. In the Leader's position sat Anot. A look of infinite pleasure was upon his small face as he glanced at Ketan.

Ketan had forgotten the tiny, ambitious geologist, whose lust for dominance reminded him of the Director. Like the latter, Anot enjoyed power over larger men and greater mentalities than his own. He was enjoying that power now.

The crowd had become hushed and silent, but Ketan could feel their gaze upon his back. Almost, he imagined, he could feel the hot breath of their sudden primitive savagery on his neck.

The Council before him was icy faced. Anot rose slowly with deliberation and turned quietly about so that his gaze raked the entire audience. He brought it back at last to Ketan.

"Only once or twice before in the history of Kronweld," said Anot, forcing his high-pitched voice to the farthest listener, "has this chamber been filled on such an occasion.

"To be accurate, I should say that *never* before has there been such a situation as we have here before us. For today we are met to pass judgment upon one whose blasphemy surpasses any recorded by our history."

He pivoted about once more, let-

ting his eyes take in the room and Ketan.

"This is not an ordinary hearing before the Council for the purpose of administering a reprimand. This man's transgressions have struck at the roots of our society and force upon us a retrospection of our entire structure of society in order that judgment may be rendered.

"We are not often called upon to consider our objectives in existence either as a community or as individuals. We go automatically from the Temple of Birth to our period of learning in the Houses of Wisdom and then take up our own Seeking according to our desires and abilities. Those having the highest gifts in Seeking are given the most respected places in our community and freed from the small but necessary tasks of producing food and buildings and conveniences which we all must have.

"Thus, we all find a satisfaction in existence. Those of us who have been in a position to view the expanding Wisdom and discoveries of the past few *tara* have been pleased to observe that the long goal of our race has almost been reached. We have almost come to the end of the Age of Seeking. Soon, we shall have discovered the secrets of all the Mysteries that lie before us and a new age will dawn in which we shall be permitted to occupy ourselves entirely with the enjoyment of those things we have produced. There shall be no more necessity for Seeking, because we shall know all. Then our minds and intellects will expand and abound with the beauty and pleasures to be found in the arts of our land and the Wisdom we possess. All men shall then experience the extreme happiness of existence in having arrived at the goal for which we set out long *tara* ago when the God first saw fit to place us here."

"Lie!" Ketan blazed forth. He whirled about and faced the tiers. "Do you . . . you Seekers believe a word of this? You whose only pleasure in life is in Seeking—do you believe you will find the supreme happiness in idleness when these already-dead old men of the Council have finally forbidden you to Seek at all?"

"Silence!"

The command of the Leader hissed at Ketan. A trio of Servicemen approached menacingly at a signal.

"You will listen and maintain respect for the Council or be removed while judgment is issued in your absence," Leader Anot glared down upon Ketan.

"I should, perhaps, thank you, however," he continued, "for exhibiting to this assembly the very qualities of the offense with which you are charged.

"There have, throughout the ages, been certain Mysteries into which we know we shall not Seek, for they are Mysteries belonging to the realm of the God, upon which we shall not trespass.

"The foremost of these is the Mystery of the Temple of Birth. Each of us comes into existence in a miraculous manner which no man comprehends. Only those Ladies

who have sanctified themselves and dedicated their lives to devoted service within the Temple are permitted to know anything of this Mystery, and it is not believed that they know fully how life comes into being there.

"But there are some among us who are not qualified to live in a community of Seekers respecting that which is sacred. They are those who view the tools of Seeking as hammers of destruction with which any irresponsible man may blindly go about tearing down the veils with which the God has shrouded the Mysteries that are our pleasure. They are those who cannot understand the difference between those Mysteries which man may unveil and those which belong to the realm of the God.

"They are those who would tear down the Temple of Birth, who would desecrate the human body by daring to cut into it in order to Seek into the Mysteries of it."

Anot leaned forward and pierced Ketan with the pinpoint gaze of his little eyes. "Such men," he hissed, "cannot be allowed to live in Kronweld."

Exile!

Something hardened and grew bleak within Ketan. He thought of the long dreary wastes of Dark Land, the hostile Bors—that would be his surroundings for the rest of his life.

But Anot had merely paused for dramatic emphasis. He went on now in deadly tones. "But since the opening of the Mysteries of Dark Land I say that all creation is Kronweld. Therefore, such men as this"—his finger stabbed out at Ketan—"cannot be allowed to live. I call for the death of this man!"

He sat down. The room was still. Then a low sob of horror swept over the assembly. Only once before in all history had such a penalty been called for—Igon, who was later given mercy and exile.

A confused murmur and a lone cry or two of protest was heard, but more slowly and more surely a thunderous note of approval grew, a surging, savage cry that turned Ketan's heart cold within him. Even the faces of some of the Councilors blanched at the torrent of fury that had been unleashed.

Ketan turned about slowly, staring at the galleries of faces. He knew them, hundreds of them. They had been his friends. They had gone to the House of Wisdom with him. Now they wanted to kill him because he had tried to show them the world beyond the Edge. Here were not the men and women Richard Simons had intended to send through the Selector, he thought. Something had gone wrong in ages past and only bitter, clever savages had come through.

Leader Anot rose again, trembling with emotion. He silenced the mob. "The Council will decide!"

He turned to his fellow Councilors. "You have heard my call. Are there objections or debate?"

Ketan opened his eyes wider and looked about the semicircle and saw blank enmity on every face, every one but that of old Jedal who rose

with tottering uncertainty. His voice was barely audible.

"I hold that this man is not guilty of any crime," he said feebly.

"Then you are as guilty as he!" snapped Nabah.

Anot ordered Jedal to continue.

"I know that you disagree with much that I hold to be true," the aged member said. "And I know that my words on this particular matter will carry no weight, for you have already in your minds judged him guilty. But I offer this: To commit one crime does not erase the fault of another. Granted that this man has transgressed in his Seeking, you propose a far greater crime in taking his life, for there is no means by which it can be done without committing a far greater desecration than that of which you accuse him. You cannot kill him."

Only the ring of judges had heard his feeble words, and Nabah spoke up craftily. "There is always a way provided. We can *allow* him to die. Starvation is a natural way of death that involves no desecration."

"That is denying him the most elemental privilege of obtaining food," Jedal objected.

"Enough of this!" Anot snapped. "We will find a way if that is the only objection. What is your judgment? Do you accede to my call?"

Only the aged Jedal demurred.

XXIV.

The death cell was a room of his own house.

Escorted by a heavy guard of Servicemen, one of whom was armed with a Dark Land weapon, Ketan was returned to the same room in which he had been prisoner the day before. Without speaking a word, they left him alone and closed the door.

He knew he would never leave that room alive.

It was night by the time the ordeal in the Council was over and Ketan lay down in weariness from the experiences of the past two days.

His tired brain forced all thought out of it as he lay there, eyes staring in darkness. Thought was replaced by a panorama of shifting images that streamed across his mental vision. There were merely images, no thought sense or judgment associated with them.

As if he were only a disinterested spectator, his brain drew out the record of his life and paraded it before him. He saw again the day that he came out of the Temple. He saw the first days in the House of Wisdom, his first meeting with Elta, the first time he heard the story of the famous and infamous Igon, the moment he determined some day to follow in the footsteps of the great man, and the fulfillment of that dream when he actually penetrated the flaming wastes of Fire Land to go into Dark Land.

He saw the visions of the pinnacle that had so tormented him during those *tara*.

And then—it was no mere mental image—!

He was sitting upright and on either side were the two from the pinnacle. As if illumined by some

ethereal inner light. Dorien was there on his right and Richard Simons on his left.

"We knew it would be difficult," said the scientist. "But we are depending on you. Do not fail us."

And then Dorien—he felt the touch of her hand upon his arm and it gave him a chill though her flesh was warm. "There is always a way out of difficulty. Sometimes it is such an obvious thing that you have overlooked it."

Then they were gone.

He was trembling in every muscle and moist in every pore. He rose and turned on the light. He was alone. For a moment, he wondered if he had dreamed it, but knew that he had not been asleep—knew it as he had always known that the visions of the pinnacle were of a reality. But what had caused this vision?

The Gateway was closed. Could projections come through the barrier anyway? He did not know. But he knew that he had friends—friends who were counting on him to complete their work. Friends who had lived and died a thousand *tara* ago, but friends, nevertheless.

It made him feel as if he had experienced a rebirth. They were counting on him. The thought rang like the reverberations of a mighty bell of undying tones. And what was it that the image of Dorien had said? "There is always a way—Sometimes it is such an obvious

thing that you have overlooked it."

New life flowed into his brain and he began to consider his position, the possibilities of survival. They were few enough. The Council had put him there to die in the only way that would not break any of their laws—by starvation. Any thought of breaking through the cordon of Servicemen outside was vain.

How could he keep from weakening and eventually starving?

Food!

Slowly he sat down and laughed softly to himself, then turned out the lights. He pressed the secret combination on his refreshment panel and in a moment he heard the soft click of its levers. He felt for the tray. It was loaded with as hearty a meal as he could have desired. The Servicemen had not found the private, secret channels that he had connected to the food service of the house. There was food enough in his storage compartments to last him many days.

Enough for exactly fourteen days, he thought.

Its presence meant that Serviceman Varano had not yet revived or been discovered. It would be just fourteen days until that event, then the Serviceman would reveal what he knew of Ketan's secret arrangements.

Ketan lost track of time. He purposely refrained from marking off the days and they grew in length until they were endless. The nights became long eons of nightmare.

Every waking moment his brain concentrated upon how to make an escape, how to contact the Unregistereds. In the narrow confines of the room there was nothing that any amount of ingenuity could turn into a weapon or means of escape. And if he could have escaped, there was no haven for him.

As the days passed and he knew the food supply was getting low, he was seized again with despair.

It was that day that he heard the first signs of his guards outside. There was a shuffling beyond the doorway and then the door opened abruptly. He stared at the figure that blocked it.

"Varano!"

The Serviceman stood erect and majestic before him, seemingly a head taller. Behind him were other Servicemen.

"So you recognize me," Varano smiled. "Perhaps you would even suggest we speak as equals again—and have me share your cell? And perhaps you would like to knock me unconscious again and put me in suspended life for an eternity this time. I—"

He stepped forward to strike Ketan, but his companions behind him seized his arms.

"None of that," they warned. "Your instructions are plain. Carry them out."

"What are you going to do?" Ketan said haltingly.

Varano laughed. "Me? I'm going to eat first." He strode to the panel and pressed the secret combination. The other men stared as a tray of food slid out and Va-

rano began eating with gusto.

"This is why he was so durable," Varano said between bites.

"Come on, this is no time for that," one of the others urged. "Take him and be gone so that we can leave this hole."

"It will be a great pleasure. Come along, Seeker Ketan. I have a place prepared for you."

"Where are you taking me? What orders do you have from the Council?"

"Since you cannot be persuaded to die here, you are to be taken to a more fitting locality. You shall be chained at the Place of Dying and remain until you are dead."

All reason went out of Ketan then. He lashed out at the Serviceman. He felt the pleasurable crash of his fist into the leering face and the surprised grunt of pain from Varano.

Then they were on top of him, pinning him tight at the center of a milling mass of enraged Servicemen.

"Take him!" one exclaimed.

His arms were securely tied behind him. The circle backed away and he stood in the center with the glowering, bruised face Varano.

"March! I'll attend to you more fully when we're alone," the Serviceman added in a low tone.

Ketan preceded the man out of the room, through the house, and out to a waiting car. Slowly, as if in a nightmare, he walked. The innumerable Servicemen he saw standing about made thought of flight foolish.

His mind burned with the memory of the horrors he had heard of the Place of Dying. He had once talked to a man who had been there.

It had been described as a great room where sick and injured lay helplessly, groaning and shricking in pain and terror, placed there and forgotten because they had become helpless and there was nothing that any man could do for them.

The customs and religious laws of Kronweld did not permit them to be killed quickly and painlessly any more than they permitted surgery. The bonds of love and friendship that were created by the families of Earth were of feeble strength in Kronweld because there was no such word as family. Mercy and sorrow over the dying were, therefore, short lived.

Varano prodded him into the car and took the driver's seat beside him. They drove off in silence.

They passed quickly through the streets, flanked with the clean white buildings of woven patterns of glistening marble. How different from the ruin and decay of Earth, thought Ketan. There must surely be something in Kronweld that could lift its men to the heights that Richard Simons had dreamed for them.

They came to the outskirts of the city where the buildings gave way to the intensely tilled farm lands. Then these merged into the barren Outlands and the glow of Fire Land blazed in the sky and burned upon their faces. They turned towards the west, following the smooth road that led nearly to the intersection of the curving ring of Fire Land and

the black curtain of the Edge—where titanic, impossible forces met in withering fury that no man had ever approached.

Varano suddenly stopped the car. He looked around for an instant and then stepped out. "This is it. Get out," he ordered. He cut the bonds on Ketan's arms.

Ketan looked about in puzzlement. "This is not the Place of Dying. Where are you taking me?"

Varano was no longer sneering and bitter, but he was stern and tight-lipped. "To Hameth," he said cryptically.

"What—?"

But Ketan got no other word out. The Serviceman gripped him by the arm and shoved him along. They stumbled through warm lava dust and passed between great mounded dunes of sand and dust blown about by the hot winds that fanned out from Fire Land.

Varano's eyes were intent upon their path as if looking for a definite spot.

"There, over behind that dune," he suddenly announced.

They plodded through the stuff that rose in stifling clouds about their heads. They came around the curve of the dune that Varano had indicated.

Ketan uttered a cry of exclamation. "A shielded car!"

"Get in," said Varano.

In blind and total bewilderment, Ketan climbed into the shining, massive car. Never had he seen one quite like it. It could hold at least six men and a great amount of equipment. Its shields were smooth massive sheets of lead and aluminum—quadruple layers of it, separated by spaces filled with argon under tremendous pressure.

There was only one use for such a car—transport through Fire Land.

Varano took his seat beside Ketan and started the silent atomic motors. Slowly the ponderous vehicle moved forward through the soft dust, its twelve wide wheels pressing heavily upon the uncertain footing.

The machine gathered speed and drove through the valleys between the towering dunes. They turned south again and straight into the blinding fires of the forbidding land ahead of them.

The dust and wind rose about the car in a spewing fury. A sand blast sprayed upon it, wheeling it about and spinning it crazily in the loose dust.

Vision was almost impossible. Varano turned on the infrared visor that allowed a good penetration of the cloud. Through it, they could see the rising curtains of flame and sheet lightning that tore incessantly through the air and spurted from the very ground.

Far ahead, a volcano was erupting, cascading molten rock down its sides, rock that gleamed with the fire of disrupting atoms and sparked ion streams into the air. The radioactive and electrical display gathered about them and inclosed them in a solid blossom of fire as they rode on.

The volcanic dust gave way shortly before the irresistible winds

that blew it back from Fire Land towards Dark Land, and the path became a tumbled, rocky surface. Hovering now on the edge of a vast chasm in whose depths burned hell-fires, now climbing through steep hills of crushed and burned stone, the path was hardly distinguishable.

Then abruptly, they came to the end. They were at the edge, peering down into burning vastness of red molten rock. A hundred feet below them it shot darts of lightning up from the chasm. Streams of frantic ions gathered on any available point of metal or rock that offered momentary haven, then tore on into space. The car, they knew, was glowing outside like a flaming meteor. Ozone filled their nostrils.

On either side of them, the chasm appeared to extend for miles. Varano seemed to slump in weary exhaustion.

"Can you take over, now?" he asked.

Ketan nodded. "Just tell me where we're going. I know the way through this blindfolded."

"Just get through—anywhere you can. All our old trails are burned out."

"All this doesn't make sense," said Ketan.

"It will. Let's see if you can take it through."

The Serviceman had abandoned all pretense of captor and captive. Ketan knew that he was being taken to some strange freedom, yet the actions of the Servicemen were incomprehensible. Ketan determined to see it through, whatever was being thrust upon him. This was escape. Of that, he was certain.

He slipped into the control seat of the shielded car and spun the wheel about. He backed away from the flowing, molten river and retraced their former path.

The day had nearly gone. Darkness was settling over the land, but there was hardly a change in their surroundings in Fire Land. The glow that engulfed them only took on a more yellow tinge.

The car slid perilously down the ramp of broken rocks and returned almost to the edge of the powdery desert. Then Ketan swung sharply east. He bore steadily through winding valleys between burning mountain masses that sped by the windows of the car, testifying to his reckless speed. Varano clutched the side of the car, but he let Ketan have freedom at the wheel.

Dust and broken rocks of the terrain gave way to a solid black mass that half glowed with an inner light and heat of its own.

"Ketan—you can't travel on this stuff!" Varano cried. "It's half molten!"

They could feel the twelve wheels sinking in shallow impressions in the black rock as the car roared on. In Earth terms, that Ketan had become so used to, they were traveling nearly two hundred and fifty miles an hour over the plastic rock.

"We can make it if we go fast enough," shouted Ketan above the now whining motors. "This is the only way through the place if the

old trails are burned out. I used this once before."

Varano made no reply. He merely sat as if hypnotized, watching the smooth shaped mounds and valleys flow past the window. The heat within the car was growing in fearful proportions. Both men dripped unnoticed beads of sweat.

"This is the toughest part," Ketan said quietly. "Tell me, quick, is it worth it to go where we are going?"

Varano stared ahead of the speeding vehicle and gasped. The black rolling surface of the endless rock upon which they traveled became orange, then gradually blazed through blinding reds until it vanished in a molten lake of shining fire that stretched more than the width of the city of Kronweld. On either side, it stretched as far as they could see, slowly narrowing to deep chasms at either end.

The car was rushing towards the molten lake with the full speed of its motors. Nearly three hundred miles an hour now. Before Varano could answer Ketan's question he saw that he had only one answer possible. They could not stop now.

Before them stretched a narrow path of dully glowing red rock. A tiny strip of half solid mass that crossed the lake of fire. It formed a long, rising arc across. Varano saw that at one point it had been completely undermined, forming a bridge. Only a thin shell arched over the lava.

Ketan saw it, too. And sweat burst anew on his forehead. That undermining had not been there

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before. The last time he crossed, the strip had been solid.

But it was too late to turn back now. The car would be upon the arch before it could be stopped. He added the last fraction of power that the motors would turn out.

The sheet of black rock vanished from before them and on either side all that was visible in their universe was the lake of boiling, surging fire that leaped at them with fingers of radioactive beams. The solid arch itself was scarcely visible in the intensity of its heat. Slowly but surely they could sense the wheels of the great car sinking into the half fluid mass.

Behind them stretched a quarter of the causeway. Ketan was nearly blinded by the incandescence of the path and blinked fiercely to keep the plunging machine from careening into the lake.

They thundered up the slight incline and could no longer see the apex of the causeway. The undermined portion was beneath them.

There was a lurch and the crash of breaking rock as the surface gave way. They got one terrible glimpse of the great cracks that suddenly spread from beneath their wheels to the substance before and behind them. They literally saw the causeway fall away below them. Yet they viewed it as impersonally as two quiet Seekers in a laboratory. They had no time to react emotionally.

They never knew whether death was upon them or not. The thundering momentum of the car flung it for a space through the air as it rose up the incline. It hurtled the free arc and landed with a jar that dug its wheels into deep ruts in the soft surface beyond.

The motors whined and groaned as the wheels slowed. But they held. They poured the energy of disrupting atoms into the wheels and bore the car steadily forward at a rising pace.

"Aren't we nearly there?" Ketan raised from his hard bed on the rear floor of the car and peered over Varano's shoulder. Ahead of them stretched the endless bleak plains of Dark Land. Overhead the perpetual clouds of volcanic ash and fog screened the light of the twin suns down to the eternal twilight of the Land.

Scraps of wild brush growth were whipping in the fierce wind, and an occasional spare tree raised naked arms to the sky. In the far distance there was a low ridge of hills.

Ketan recognized no aspect of their surroundings.

"How long have we been traveling?" He asked his two questions in a single breath.

"Another half day and we'll be there," said Varano. "We've been traveling a day and a half now."

Ketan made a mental calculation. If they had maintained speed, they had penetrated farther than any previous explorer into Dark Land. They had long ago passed the steaming swamplands that was thought to be the border of Dark Land.

"Want me to take over again?" Ketan offered.

"If you will, please."

Varano moved over and allowed Ketan to take the controls. "You may as well get some sleep," Ketan said.

"Couldn't take any more. There are too many things to think about after being away so long."

"Where are we going, anyway?" Ketan asked for the hundredth time.

And for the hundredth time Varano shook his head. "I can't tell you. Orders. You'll get all the information Hameth wants you to have when you arrive. I was ordered merely to bring you in."

The afternoon reached its peak of feeble illumination and began to fade. Hour after hour, Ketan kept the car rolling over the level plains at nearly three hundred miles an hour.

The monotonous whine of the motors lulled him and he tried to grapple with the problem of why they were speeding so aimlessly into the wastes of Dark Land. And who was Varano?

This factor tormented him as much as any other. The once subservient Serviceman had lost all the humility and deference that had characterized him when Ketan first knew him. He was bold and sure of himself now. There was a light in his eyes and a strength in his carriage that baffled Ketan.

"What will the Council do when they find you have let me escape?" Ketan asked.

"It doesn't matter much because they will never see me again. I can't go back. My usefulness to the Restoration in Kronweld has ended."

"The Restoration—?"

"I have said too much. Please forget that word until you hear it from Hameth."

The air grew cold with the coming of night and the desert gave way to low hills that grew slowly into towering masses of piled and shattered rock that lumbered towards the sky. Their tips grew white with snow. Ketan had not known that it existed in his world.

The depths of the snow increased and flurries began to swirl lightly about them. In the lights that stabbed out ahead of the car, a million dancing flakes of white began to fall.

Varano was fully roused and peering anxiously ahead. "Take it easy," he warned. "The road gets narrow through the mountains here."

The warning was superfluous. Already the car had begun to slide and skid dangerously. The journey lengthened into the night, slowed by the howling blizzard that shortly raged about them. They had to slow to less than forty miles an hour.

But shortly after midnight of the first sun they reached the top of the mountain pass and looked into the depths of a tiny valley below. Lights glinted weirdly amid the swirling snow.

"That's it!" Varano cried. A flush of happy excitement was on his face. Ketan realized that, curiously, Varano loved this place, that Kronweld was nothing to him. All

his loyalty and affection were for this hidden valley in the mountains of Dark Land.

They had stopped at the top of the pass. Now Varano took the wheel and eased the massive car slowly forward, down the long slope that led to the valley.

Silently, they slid down the ghostly lane through the white shroud of snow. Only the ill-defined path ahead of them was visible until they came suddenly to a blockade in the midst of it.

Varano pressed a button that slid a panel of the window down, and stopped the car. Two men, carrying what looked to be overgrown Dark Land weapons, appeared out of the night and halted beside them.

Varano spoke to them. "Instigator Varano reporting—with A-A Probable, Ketan."

"Proceed to Operations Center. You will be relieved of responsibility and Hameth will receive Ketan. We'll call ahead."

They drove on, but Ketan did not try to question Varano further. He knew that it was useless to do so. But all questions seemed close to being answered as they neared the city in the valley—and the mysterious Hameth.

The dark outlines of buildings appeared beside snow-covered streets as they came slowly into the outskirts of the city. Ketan could not make out any detail of shapes, but a strange nostalgia struck him as he thought of Earth and Elta and the Illegitimates.

The street opened into a large, lighted thoroughfare and great buildings loomed about a central square. In the center of the square rose the most magnificent structure of them all.

It was brilliantly lighted and shed radiance upon the snow for a great distance around. Atop the building a thin tower of metal needled towards the heavens.

Skillfully, Varano swung the great car into the square and along a pathway that led to an opening in the building. For a short distance they crept through a narrow passage, then ended in a room where there were a dozen other cars of assorted sizes and shapes, none so large and powerful as their own.

"This is it," said Varano. His mouth parted in a friendly grin for the first time during the treacherous journey. "I'll show you to your chambers."

They emerged from the car, walking with cramp stiffened legs up an incline that led into the upper levels, and came out into a large, deep-carpeted corridor. Numerous doors opened from it. They paused before one. Varano opened the door and they entered.

"This will be yours. You'll find everything you need. Hameth will come to you when he's ready. Then you will know everything—or at least what he wants you to know for the time being."

Varano turned and closed the door behind him abruptly.

"Wait!" Ketan cried. "When will—?"

But he tried the door and it would not open.

XXV.

The room might have belonged to the most renowned of Teachers. The food panel was elaborate and confusing in the many selections that it offered. Mellow light suffused over the walls and luxurious furnishings with refreshing radiance.

He found fresh clothing and bathing facilities, and a soft bed called invitingly.

He ate and changed and prepared for Hameth's coming. He sat upon the edge of the bed to await any call that might come. Through a music panel he listened to soft music playing.

It lulled him into restful sleep that lasted throughout the night.

He awoke with a start, trying to comprehend his surroundings. He roused slowly and sat up. It was then that he saw the other man across the room from him. The stranger sauntered forward until he occupied the center of the room.

Ketan opened his mouth to speak and closed it again without uttering a word. A quality about the man forbade speech. Ketan felt that he held the experience and wisdom of a dozen lifetimes within him. But he did not look old.

His face was weathered like the granite mountains of Earth. But his hair was black and thick. He was dressed only in brief trunks that exposed his bronzed, heavily muscled body to the invigorating air of the room and the radiance of the ceiling lights. Power and strength surged in that body as if to burst the physical bounds of the creature.

And somehow there was a strange, haunting familiarity about the man. But Ketan's mind could not fasten upon the feature that aroused a memory. He scanned the shallow lines of the face, the black shock of hair, the eyes—his gaze fastened upon the man's eyes. There was something there. There and in the close-set, sensitive lips. But the identity still eluded Ketan.

He spoke as Ketan rose and stood self-consciously before him. His voice was like the billowing of wind through Earth's great forests.

"You are Ketan," he murmured. "How long I've waited for your coming! Through the years I held out, knowing you would come, when they told me it was useless, that you were not the one."

Ketan's mind attempted to assimilate the strange meaning of the words, but there was no sense relation that he could establish.

"Who are you?" he asked.

"I am Hameth, Chief under Igon."

"Igon! Then you can tell me where he is! I must find him."

"I cannot tell you without his orders. But I may tell you that you already know him, for you have seen him. You will know him when you see him again. For many *tara* he has known of you."

"I do not understand," said Ketan weakly. And in his mind he was shuffling furiously over the catalogue of those whom he had known."

Which of them could be Igon?

Branen—Matra, in disguise, but Matra was dead—William Douglas. He stopped. Was it possible that the mysterious leader among the Illegitimates was somehow the great Igon? Or in the pinnacle itself—Richard Simons. Perhaps the scientist had not been merely light and shadow at all. Or among the hundreds of images in that reconstructed laboratory Igon could have been hiding.

There was no way of knowing. Then Ketan's eyes narrowed. What of the man, Hameth, himself? Just who was he?

Hameth was speaking again.

"Please sit down. I shall answer many of the questions that are in your mind. I have a great many things to tell you. But first, there is one question I must have answered. Do you still believe it possible to convince the people of Kronweld of their destiny and take them back to Earth, as you wanted to do?"

Ketan's head bent low and he glanced down at his bare feet that rested upon the soft warmth of the scarlet rug.

"No," he said slowly. "I was wrong. Their conditioning by the superstitions attached to the Temple of Birth is too strong. They could be convinced only by the impact of its total destruction and being thrown back into Earth as I was."

"Good," said Hameth. "If you had not answered as you did, I could have told you nothing more. Now that you have learned that one truth I can go on.

"There is another fact: You, yourself will never be able to entirely overthrow the conditioning that you have received in Kronweld. Do you understand that?"

Ketan nodded again and looked up into the gem hard lights of Hameth's eyes. "I know that, too. I thought after experimenting with the Bors I could endure the sight of blood. In the Kyab among the Illegitimates—"

"I know," Hameth interrupted. "You will gradually attain new habits and customs, but remember the man of Kronweld is always there beneath the new Ketan. And the man of Kronweld is a false, unreal person."

"But what is to be done?" Ketan cried. "Was Richard Simons wrong? Is all the commission of Kronweld to be abandoned?"

"No. We have to do as you said. Confront them with the destruction of the Temple and the reality of Earth."

"How?"

"That is what I have to tell you. I must go back to Igon's day. He was the first to be chosen by the mechanism Richard Simons incorporated into the Selector to bring him back to Earth. I think you understand how that operated. When an infant of certain predetermined characteristics appeared, the machine stamped upon his brain an impulse to bring him back through to Earth. The method of return varied so that some would be sure to succeed. Other Gates

beside the one in the Temple were provided. Igon found his in Dark Land. But, of course, they have all been closed by the destruction of the central Selector.

"Igon went to the pinnacle even as did you. He found the same things and was told the same story. Even as you, he came back and defamed the Temple of Birth and tried to tell his story. You didn't know that, did you? The real reason for his condemnation and exile was suppressed and eventually forgotten in Kronweld.

"As soon as he was banished he set about carrying out his task in a logical manner. He had learned the same lessons that you have so laboriously learned. So he set about organizing first those who came through to the pinnacle. Since him and before you there were nearly a hundred. All but a few who died are here now. Then he chose some from among the Illegitimates who were the most intelligent. He took some from among the common people of Earth, and even recruited a score or so from the Statists themselves. Among the people of Kronweld, he found only a few like your Unregistereds. Incidentally, if you have wondered, Branen and three fourths of the others are now here working with us.

"This organization that he built up, Igon called the Restorationists —dedicated to the restoration of Earth. You have a place in it of more importance than I can tell you now. You will learn later of the details."

"But how can we ever go back with the Gateway closed? We must find a way to reopen that," Ketan protested.

"I don't know what Igon has in mind. I have been assured that it will open when we are ready. We are instructed to go on exactly as if nothing had happened to close it."

"I don't see—"

"Neither do I. But we take orders from Igon."

Ketan looked into Hameth's eyes for a long moment of silence. He felt almost certain that the man was deceiving him somehow.

And then he knew. The fragments of familiar points of Hameth's features fell into place in his memory.

"I know you, Varano," Ketan said quietly.

It was a moment before Hameth's mouth gave way to the merest flicker of a smile. "I told Igon you would be sure to guess eventually. I hoped it wouldn't be so soon, though. My disguise was sufficient for a Serviceman of Kronweld who had never been seen as Hameth. But I was too close to you. My disguise was imperfect for that purpose."

"But what does it all mean?"

"Igon ordered me to take care of you personally. I was to help you get to the pinnacle by quite another plan. You upset things completely when you knocked me out, but you accomplished the final result on your own initiative, which turned out well enough."

"I'm sorry—I couldn't know—"

"No harm was done. Forget it."

"I don't see how you could assume a registered identity in Kronweld, one that had never existed."

"The real Serviceman Varano was a Statist. He is dead," Hameth said simply. "The reason for Igon's great interest in you, which you must be wondering about, is that he has access to your record made at the time you passed through the Selector as an infant. He wants the dormant qualities in you developed in order that he may use them."

"What have the Restorationists been doing here in this valley?"

"Preparing for the attack of the Statists."

"Is there no way of preventing that?" Ketan exclaimed. "With the knowledge and the Seeking possessed by the Restorationists, surely it could be avoided now, and a direct conflict circumvented."

"Perhaps it could be avoided. I don't know. But we aren't concerned with that. We do not want to prevent it. It must occur."

"You want it to happen?" Incredulous, Ketan had half risen to his feet. He sank down again, staring in disbelief at Hameth.

"Think a minute," said Hameth. "You have seen the Director of the Statists and Bocknor and Javins. Those three alone are enough to demonstrate to you that the Statists must be destroyed utterly, their power crushed. Can you imagine them submitting to the return of the Kronweldians in any peaceful manner whatever?"

"No. No—I can't, but I—"

"That's the only answer. We shall wait for their attack and destroy them completely and take over their rule. They will expect no resistance and it will be a simple matter to turn them back.

"A good many other things will be accomplished also by their attack and subsequent destruction. They will burst into Kronweld and begin annihilating the city. What do you think the effect of that will be upon the Seekers of Kronweld?"

For a moment Ketan let his mind imagine the destruction. He pictured the Statists—Bocknor, breaking through the Gateway with a projector beam that would sweep through the city like a great fiery knife. It would shatter the stone of the Temple and explode it into fragments that would spew out over the city. Then the beam would burn and destroy—

"They will wipe out Kronweld!" Ketan exclaimed.

"Some will die, perhaps," said Hameth solemnly. "That is the price they will have to pay for ignorance and superstition. I promise you this, though: We have gathered out all those who will be of irreplaceable value in our restoration of Earth. None of them will die."

"It should not be necessary for any to!"

"The man of Kronweld speaks again," said Hameth. "You haven't answered my question. What will it do to the Seekers?"

"If it won't destroy the superstitions of the Temple of Birth and the inviolability of the Sacred Mys-

teries then nothing will."

"That is our analysis. Before the city is damaged excessively our generators will appear and wipe out the Statists as they come through and then go on to Earth and destroy their citadel. When we have control we shall establish an orderly exodus back to Earth and a system of education to teach the Kronweldians as you and Igon and the others were taught the facts of Earth's history.

"But remember: The destruction of the Statists by force is essential, and the demonstration of our power in this manner is the only means of teaching the Kronweldians the truth of their situation. Do you understand that?"

Ketan dressed hurriedly after his private meal. He donned heavy, padded clothing which was strange to him, but Hameth had said that it was necessary in the cold outside.

Ready, he opened the door of his room and went out into the hall. Hameth was coming towards him still clad only in the brief trunks. He smiled in greeting.

"I want you to see our buildings and factories and get an understanding of the preparations we have made," he said.

It was snowing when they went out. Ketan stopped and put out his hands and tipped his head to feel the cold touch of it upon his face. A chill went through him as a gust of icy air swept over them, but Hameth did not seem to notice the cold upon his bare flesh.

Hameth laughed softly. "They are all quite astounded by the first sight of snow. But hurry; there are things to see and the time is short."

The city was almost as large as Kronweld. Hameth had named only a few of those they had recruited as Restorationists. Ketan asked "How many of you are there here?"

"About the same number as in Kronweld."

"But—"

"Birth is normal here. Already there is present the third generation of Restorationists who have been born and taught all their lives the significance of our work. They will be of most worth when we go back."

"Do you know why there is no birth in Kronweld?"

"It is something that Richard Simons could never have anticipated. Sterility is caused by the radiations of the first sun and by the radioactivity of Fire Land. We are protected from it here by distance and the haze that is always in the sky."

"Those who have been exposed to it can—"

"Those who have faithfully worn their leaden day cloaks are usually only temporarily affected by the condition. Most of those who have come to us from Kronweld have reproduced normally after varying lengths of time. But here is the generator plant."

They approached an enormous, inclosed building and passed inside. Towering above him, Ketan saw rows of silent, mobile monsters that filled the building. They were

great, gray hulks that shone with highlights of the thousand points of light in the ceiling.

Dwarfed, scores of men worked in and about the machines in silence.

"What are they?" Ketan exclaimed.

"These are the mobile generator units which we will throw against the Statists when they first come through. Come inside."

Twenty wheels of adjustable reach supported the monster. The two men entered through a hatch that opened in the forepart of the belly between the rows of wheels that were half again as high as the men.

Inside the lighted interior an unfamiliar maze of machinery was presented to Ketan's sight. The shapes of the machines on the lowest level were orthodox enough to be recognized as power generators. Ketan made an estimate of their output from their size and it awed him that so much power could be created within this mobile weapon.

The second and third levels presented totally unfamiliar equipment. Banks of fat, oversize generator tubes occupied the second. The third was an entirely exposed turret whose only protection appeared to be a metal mesh that extended over it. And then Ketan noticed that it went down to the base of the machine, held away by short insulating posts.

On the turret, an operator's position was behind a huge loop twice as high as Ketan and built of cable nearly as thick as his body. Opposite, across the turret, was a smaller loop, and between them extended a hollow rod through the axis of the loops. It appeared to have no visible support.

"Radiation is the most economical and effective method of converting power to destructive uses. These small generators are capable of throwing a beam from here to Kronweld," said Hameth, "but we intend to use them at closer range. Later, I'll take one out and give you a demonstration."

Without the demonstration, Ketan could vision the terrible power of those generators being poured into a beam of destruction. He wondered if there were anything in existence that would stand up under it.

"We'll go over and see the main weapon now," Hameth said.

They went out into the snowstorm again and crossed to a smaller building nearby. As Ketan glimpsed it through the snow curtain he exclaimed at its construction.

It was only a much enlarged duplicate of the turret on the small generators. It towered far above them into the blinding snow. But no flakes were falling upon that mesh.

They went into a small, nearby chamber that led downward into a deep chamber that was hot with the escaping radiant heat of hundreds of idling power generating units.

"There's enough power here—" Ketan gasped.

"—to carve away the mountains about us in less than a breath's time," finished Hameth. "Come upstairs with me."

They went up to ground level and stood beneath the huge ring of the projector. Behind them were the controls.

"This unit is actually more mobile than the small machines," said Hameth, "or will be when the Gateway is restored.

"I wonder if you understand the full possibilities of this instrument of the scientists of the pinnacle. Opening of the Gateway simply means that a certain relationship is established between this plane and that of Earth. There is no definite spatial relationship involved. Passage from one plane to the other may take place at any point in either plane. It may be localized at one definite spot as in the case of the Gateway through the Temple of Birth, but this is not essential. In fact, we have been using it for transport entirely within the confines of Kronweld. This is done by passing through to Earth and then returning here at the desired spot.

"Thus, we can utilize this property to locate either our small mobile generators or the big weapon at any point we desire in Kronweld or Earth almost instantaneously."

Ketan was as much dismayed as buoyed up by the sight of the great engine of destruction.

"It's so great a waste," he said. "Time, materials, men's energies—"

Hameth gave a short, harsh laugh. "Wait until you have time to study the histories of Earth in the pinnacle. You will learn of waste, there."

Ketan felt the growth within himself. Contrasted with the impul-

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sive Seeker who had defied the Council and first threatened to expose the Temple, he had come a long way.

It was not outwardly visible, perhaps, but he knew it, and the Unregistereds whom he met in the following days knew it by contrast after they had spoken to him for a time.

He had learned to know and understand something of three other great groups besides his own, the Illegitimates, the Statists, and the Restorationists.

Little by little he absorbed the details of the plans that Igon had made for the rebirth of Earth. He felt awed and humble before the wisdom and foresight that Igon had shown. But it was wisdom that Igon had gathered through many *tara* and Ketan did not feel abashed before it as he sensed himself growing and accumulating power as he devoured the results of Igon's long experience.

He devoted himself to a study of the methods and accomplishments of the Restorationists. A library in Operations Center gave him the story of three generations in the valley. Igon's plans had apparently grown as he went along. In the beginning he was only concerned with the gathering of a group who could understand the problem. He had no solution then, but the group spent many years in studying the millions of volumes in the pinnacle.

As the threat of destruction by the Statists developed, they interpreted that as a solution. Through an extensive spy system they learned in detail the plans of the Statists. They were sure of themselves and their plans were made with confidence.

Now they were ready, and the city was filled with an eagerness that overflowed and expressed itself upon every face. Ketan could understand their feelings as the prospect of the final accomplishment of their goal after the long decades of waiting. But even though he had always known it was necessary, except for the short moment when he had hoped the Restorationists might find a way to avoid it, he could not feel a great elation at the prospect of the fierce and bloody battle to come.

His brain was tired from the endless racking desire to find a better way. He knew the Kronweldians, and he knew the Statists—and he knew that Igon was right. There was no other way.

The Restorationists themselves were a conglomerate mass that offered no single distinguishing characteristic. There were the determined, freedom loving but unskilled Illegitimates. There were the poets and Seekers of Kronweld. And there were the aristocrats of an old but decadent culture from among the Statists. All of them had only the one point in common, a desire for union and freedom upon their home world.

Ketan was assigned to the technical planning authority which would execute Igon's plan of attack and defense when the time came. In such position he was re-

quired to learn the intricate details of dozens of complicated programs, to understand the functioning of every machine and weapon they planned to use. He learned to handle the mobile generators and was given a temporary command of a Unit composed of thirty machines.

Hameth, despite his thousand other duties, took upon himself Ketan's personal instructions. After days of mastering the intricate controls of the generators, Ketan was given one to take on a difficult maneuver.

"Take it over in the next valley," Hameth instructed. "The target is through the mountain. Your co-ordinates are in this sealed packet. You are to burn the target, but leave no marks farther away than fifty *turl*."

Ketan stared at him. It was an almost impossible problem requiring the utmost co-ordination in synchronizing and phasing the waves rotating in the loops which in turn generated the beam of destruction in the hollow tube.

But he nodded. "On target." He waved as Hameth climbed down the companionway and left the generator through the hatch.

Ketan rolled the titanic machine along the bleak plain below the city where the maneuvers were being held. In the distance he could see two other generators widely separated. Where the others were he didn't know, but the entire Unit was participating.

Under the deceptively frail mesh that covered the turret of the generator, he seemed entirely alone in the universe. It was snowing again on the plain and he was forced to use the infrared vision plates to see a length of the generator ahead of him. Above, he watched the flakes of white turn gently aside and slide down the invisible slope of force set up in the mesh. In such solemn isolation it seemed impossible that the loop towering above him could hurl a beam of terror and destruction into the dark unknown before him.

Shortly, he came to the valley designated by Hameth. Littering the valley floor were mounds of strewn wreckage that marked targets of previous days, abandoned and obsolete machines that had been brought here for trial. It was a graveyard of the predecessors of the monster whose back he now rode.

His attention turned to the difficult problem before him. He adjusted the speed control to the proper point, then turned it over to automatic operation. He adjusted the sight controls to the co-ordinates of the target and watched as they slowly came into line with the actual axis of projection of the beam. His hand rested on the beam focus control which required adjustment during the fraction of an instant that it was on, in order to assure its concentration on a single spot.

The snow was increasing in its blinding whiteness, but Ketan glimpsed dimly the squat, massive shapes of two other machines lumbering towards him. He wondered what their mission was.

But he couldn't be concerned with that. The completion of his own was at hand. He waited tense in every muscle for that terrible silent flame of destruction to come.

It never did.

In the white desolation of the plain Ketan glimpsed a figure that appeared suddenly out of the nothingness of the snow curtain. It was a bronze, half-naked figure running madly at inhuman speed—straight towards him.

During an instant's hesitation he thought it must be some wild hallucination. Then he threw the brake control to the limit. But the tremendous momentum of the generator could not be halted that quickly. The figure of Hameth disappeared out of his line of sight. Ketan thought he detected a faint jar and the machine thundered on.

When it came at last to a halt, he was already swinging down the companionway towards the hatch. The wind-driven snow felt like a sudden immersion in liquid fire as he thrust his legs out and followed with the rest of his body. Then he stumbled on beneath the belly of the machine, searching between the massive wheels and back along their deep tracks in the snow and mud.

In the path of those wheels the ice-hardened ground had melted under the pressure applied by the jagged steel treads and as instantly frozen again into a mold of the generator's path.

But there was no sign of Hameth.

Ketan raced frantically up and down the length of the tracks for hundreds of feet. There was nothing. Only mud and crushed bits of steel and glass and parts of long dead machines in the valley graveyard.

The other two generators had come up now and their operators swung down through the hatches.

Ketan turned towards them, his eyes staring in shocked disbelief. "Did you see him, too?" he asked hoarsely. "He ran straight towards my wheels. I couldn't stop—"

One of the men nodded. Ketan knew him as a young third-generation Restorationist named Alva. "We saw him. He must have gone crazy. He surely saw you, yet he deliberately ran under your wheels. Where is he?"

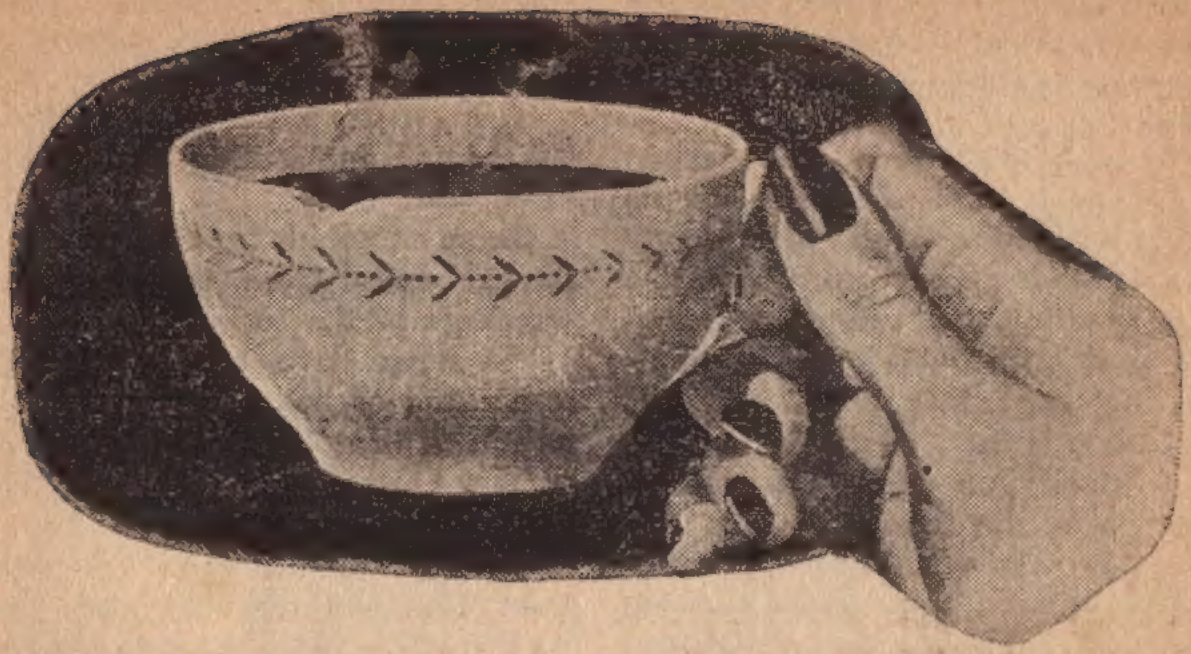
"He isn't here."

It was their turn to stare. Then they searched again the length of those frozen tracks. There was no sign of the crushed and broken body of the leader of the Restorationists.

It was while the other two men were a dozen generator lengths away from him that Ketan saw it. It was just a length behind his machine, lying in the left track, a shining bit of glass and steel that shone in the blaze of light pouring from the open hatch of the nearby generator.

He saw a glimpse of bronze in the distorted pattern of a crushed arm. He bent down to touch it, then froze immobile as if the snowy blast had turned to liquid air.

After an interminable time he rose, and a thousand questions were



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answered. A sense of loss and an infinite sorrow tore a great sob from him that made the distant operators look up and shake their heads in pity.

Then he bent down and touched again that fleshless arm—with its bone of shining steel. He slowly traced the almost unrecognizable body outline, the twisted arm and leg shafts, the burst vessel of shimmering glass that was where the head had been.

I know you now, Varano-Hameth-Igon, he thought. This was the way in which the great Seeker had conquered time. A bit of brain tissue to think and dream and control that mighty body of imperishable steel and glass. That was all that had been necessary. Igon the immortal.

Why had he destroyed himself by running beneath the generator's wheels? Something must have gone wrong with the machinery of the body and put it out of control of Igon's brain.

The others were coming back. "We didn't find a thing," said Alva. "Did you?"

Ketan shook his head silently and moved away from the betraying wreckage of the body.

"It must have been a mirage, some kind of hallucination that hit us all. I'm going to see if I can contact Operations Center and find out where Hameth is."

But the other man had already gone into his machine and now he thrust his head out and cried in a voice of terror and triumph. "Operations Center calling all generators in. The Gateway is reopened. The Statists are attacking Kronweld. They have struck at the Temple of Birth!"

TO BE CONCLUDED.

THE ANALYTICAL LABORATORY

With two months to report, and practically no space available, bare reports alone can be crowded in:

Place	*Story*	*Author*	*Points*
	May Astounding		
1.	Environment	Chester S. Grier	2.2
2.	The Winged Man	E. Mayne Hull	2.5
3.	Latent Image	Wesley Long	3.0
4.	City	Clifford D. Simak	3.3
5.	The Yehudi Principle	Frederic Brown	3.7
	June Astounding		
Tie:	Trog	Murray Leinster	2.4
	Arena	Frederic Brown	2.4
2.	The Winged Man	E. Mayne Hull	2.6
Tie:	Trojan Fall	Hal Clement	3.75
	Boomerang	Harry Walton	3.75

And the Probability Zero yarns rated George Holman, $1; Gordon Garrett $2 and Robert Browning $3.

THE EDITOR.

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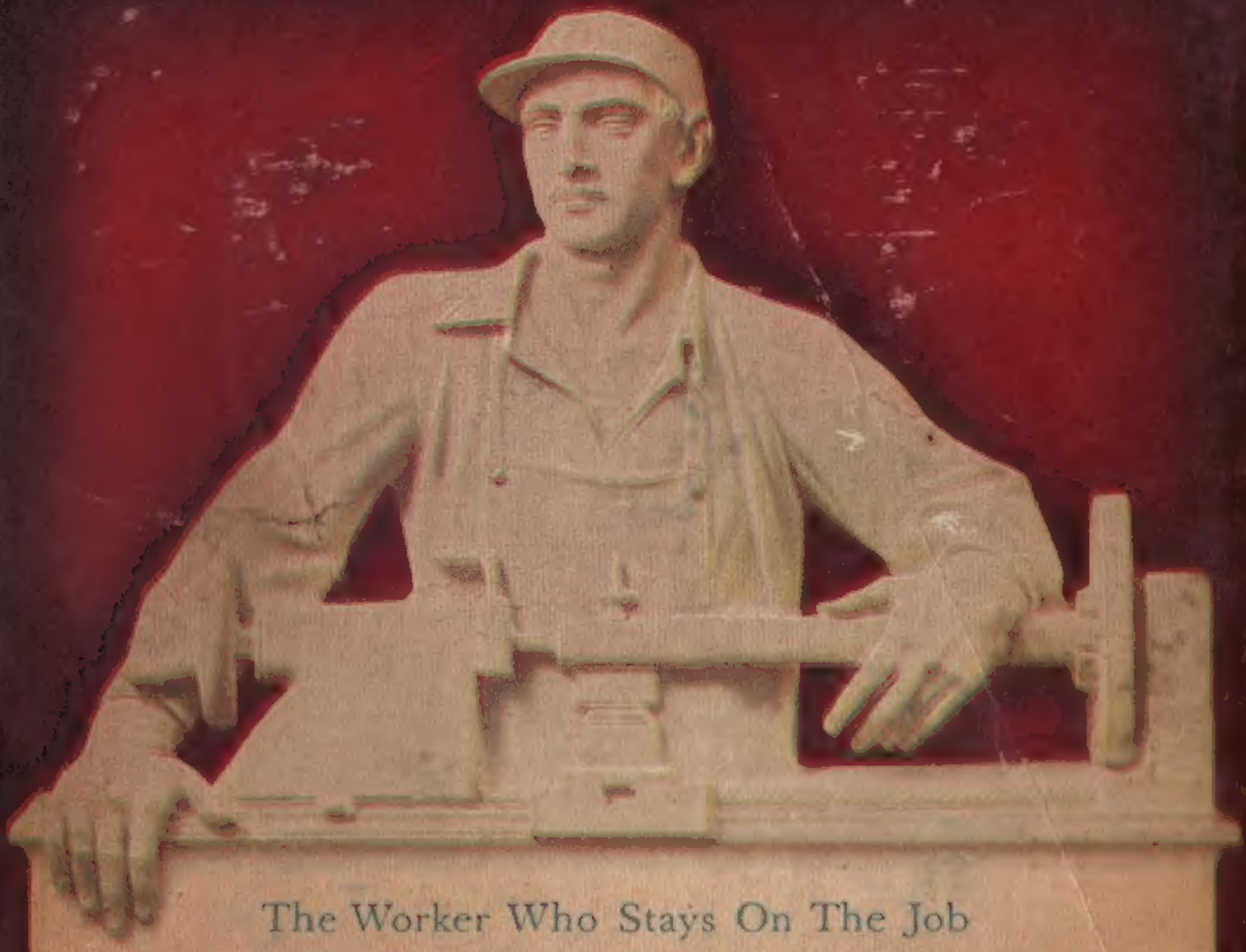

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